OKI
PRINTING SOLUTIONS

B6500
Troubleshooting Manual

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Chapter 1 Troubleshooting CONTENTS

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NOTE

The FIP makes the assumption that the printer controller (PWBA ESS) is functioning normally. If the problem cannot be corrected by using the FIP, replace the printer controller with a new one and check for proper operation.
Any OEM with unique specifications, or the direct control of any operation by the printer controller, may cause the operation to be different from the description in this manual.

NOTE

Troubleshooting in this manual assumes use of Diag. tools (maintenance tools). However, the troubleshooting procedures allow for the case where the Diag tools are not used. You can correct printer problems by using these procedures.

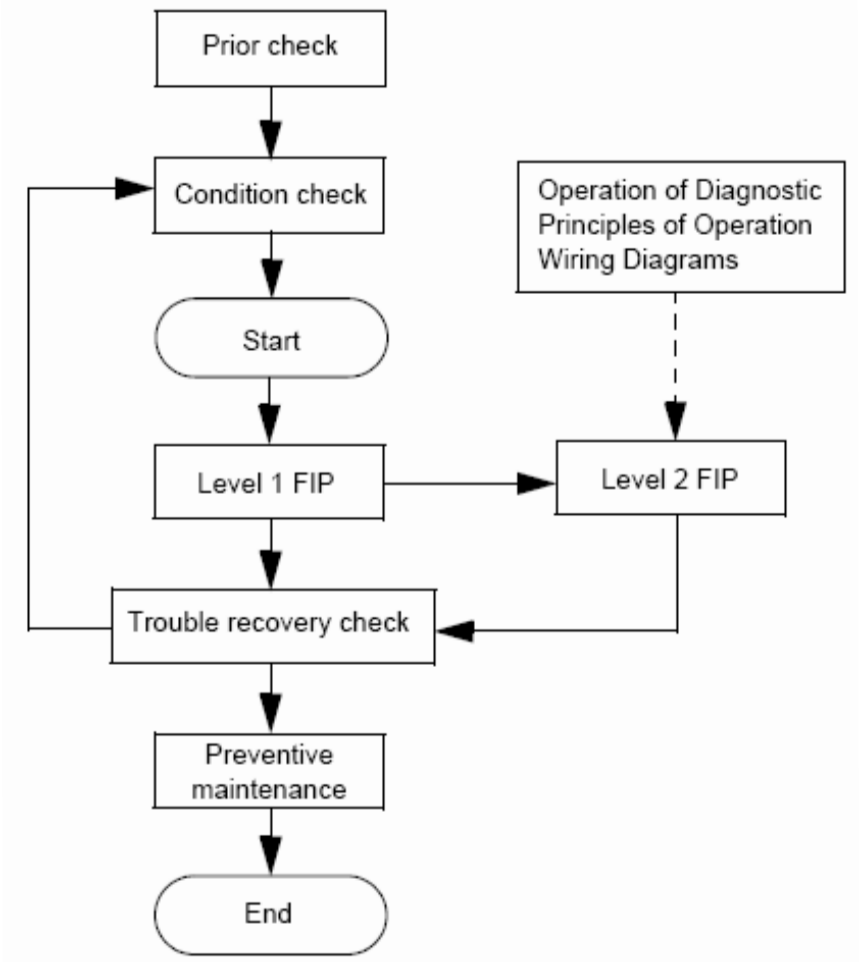
Chapter 1 Troubleshooting

1. Progressing with the Troubleshooting

After verifying the nature of the problem, proceed with the troubleshooting process efficiently, making use of the Fault Isolation Procedures (FIPs). Also use the Maintenance Manual for Operation of Diagnostics, Wire connecting diagrams, and Principle of operation.

1.1 Troubleshooting Flow Chart

Using the Troubleshooting Flow Chart, proceed as follows:



1.2 Preparatory Requirements

Be sure to check the following items before beginning the troubleshooting procedures:

1) Voltage of the power supply is within specifications (measure the voltage at the electric outlet).

2) Power cord is free from breakage, short-circuit, disconnected wire, or incorrect connection.

3) The laser printer is properly grounded.

4) The laser printer is not installed in a place subjected to extremes of temperature, humidity or rapid change of temperature.

5) The laser printer is not installed close to water service, humidifier, heat generating unit, or fire, in very dusty place, or a place exposed to air flow from the air conditioning system.

6) The laser printer is not installed in a place where volatile gas or inflammable gas is generated.

7) The laser printer is not installed under direct sunlight.

8) The laser printer is installed in a well-ventilated place.

9) The laser printer is installed on a strong, stable surface.

10) The paper used in the printer meets specifications (standard paper is recommended).

11) The laser printer is handled properly.

12) Parts which should be replaced periodically are replaced when the specified number of sheets have been printed.

1.3 Cautions for Service Operations

1) When servicing the printer, be sure to remove the power cord from the power outlet except when absolutely necessary.

Unless specifically indicated, whenever the printer power is ON, never touch any of the electrical components.
The power switch/inlet of the LVPS has voltage present even while the power supply is cut off. Never touch any of the electrical components.

2) When it is necessary to check a component(s) with covers removed and with the interlock and safety and power switches ON, remove the connector (P/J140) on the ROS ASSY.

When checking some parts with covers removed and with the interlock and safety and power switches ON, laser beams may be emitted from the ROS ASSY. Since it is dangerous, be sure to remove the connector (P/J140) while performing service.

3) When it is necessary to check a component(s) with the left cover removed and power ON, be sure to remove the HVPS connector (P/J31) while servicing the printer.

When checking some parts with the left cover removed and power ON, high voltage may be applied by the HVPS. Be sure to remove the connector (P/J31) on the HVPS. When connecting the connector (P/J31) on the HVPS according to the instructions of the FIP, never touch the HVPS or any of its parts.

4) When using Diagnostic tools or a meter to measure high voltage, be sure to keep the components covered unless specified.

When using Diagnostic Tool or a meter to measure high voltage, never touch parts of high voltage.
Be sure to follow the procedures in this manual.

5) When operating a drive unit using the Diagnostic or other tools, be sure to keep them covered unless otherwise specified.

Never touch the drive units when operating them using the Diagnostic or other tools. Be sure to observe the procedures in this manual.

6) Avoid burns by not touching any fusing components until they have had sufficient time to cool down.

7) Damage to sensitive electronic components should be avoided by grounding the body using a wrist band or other suitable Electrostatic Discharge (ESD) tools.

1.4 Cautions for FIP Use

1) The FIP makes the assumption that the printer controller (PWBA ESS) is functioning normally. If the problem cannot be corrected by using the FIP, replace the printer controller with a new one and check for proper operation.
   If the trouble is not still corrected, replace the major parts and then related parts in succession and confirm according to the procedures of the "Initial check" and "Major check parts".

2) When troubleshooting using the FIP, parts substitution of the HVPS/MCU, FUSER ASSY, BTR ASSY or other parts may be necessary for fault isolation. Have these parts available in advance.

3) The initial checks in the FIP only checks items which are most likely to cause the problem and can be quickly eliminated.

4) Check both the major parts as well as any related sub-components in the initial checks.

5) When working with the printer, be sure to remove the power cord. If a check requires the power to be connected, never touch any live parts.

6) Connector condition is denoted as follows:
   [P/J12]→Connector (P/J12) is connected.
   [P12]→Plug side of the connector (P/J12) removed (except when attached directly to the board).
   [J12]→Jack side of the connector (P/J12) removed (except when attached directly to the board).

7) [P/J1- 2(+) and P/J3-4(-)] in the FIP means taking a measurement with the plus side of the meter connected to [P/J1, Pin 2] and the minus side to [P/J3, Pin 4].

8) [P/J1 -> P/J2] in the FIP means measurement for all terminals corresponding between [P/J1] and [P/J2] as shown in the "Wire connecting diagram".

9) In [P/J1- 2 (+) and P/J3-4 (-)] in the FIP where voltage is measured, [P/J3-4 (-)] is always at the AG (analog ground), SG (signal ground), or RTN (return).
   Therefore, after verifying ground between AGs, SGs, or RTNs respectively, the minus side can be connected to the PIN of AG, SG or RTN instead of [P/J3-4 (-)].
   However, care should be taken not to mistake since [AG], [SG], and [RTN] are not on the same level.

10) Measure the voltage of small connectors with the special tool. Handle the tool with care, as the leading edge of the tool is pointed.

11) When measuring a voltage, ensure that the EP CARTRIDGE, BRT ASSY and paper tray are properly seated. Close the COVER TOP ASSY, FUSER ASSY, and COVER REAR and switch the printer power ON.

12) Voltages in the FIP are nominal. If the values fall within a tolerance of +/- 10%, they should be considered acceptable.

13) Parts which are routinely checked, as indicated in the FIP, and without any specific removal procedures, should be handled carefully.

14) "Replacement" in the FIP indicates replacement of parts which are considered to be the source of trouble. These parts are sometimes components of assemblies containing them, or of a higher-level assembly. In such an instant, the higher-level assembly must be replaced.

15) In the FIP, the paper tray at the lower part of the printer is referred to as "Tray 1", and the second tray as "tray 2", and the first tray of Option 550 Paper Feeder as “Tray 3”, and the second tray as “Tray 4”.

16) Some checks in the FIP make decisions based on the availability or non-availability of Diagnostic tools (maintenance tools). Troubleshoot accordingly using the instructions in the FIP.

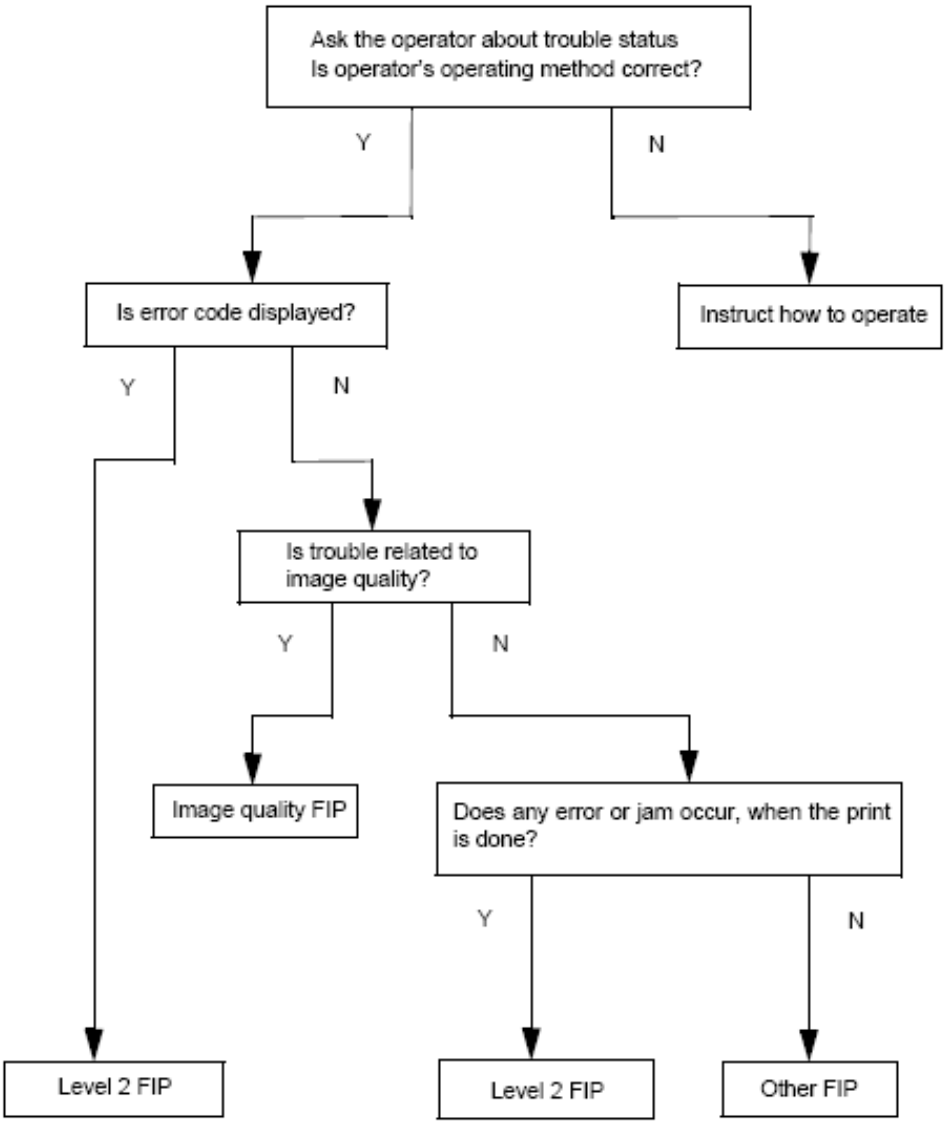
17) Some checks in the FIP make decisions based on specifications. Troubleshoot accordingly using the instructions in the FIP.

2. Level 1 FIP

2.1 Level 1 FIP

The level 1 FIP is the first step for problem resolution. The level 1 FIP isolates the presence of various troubles including error codes. The level 2 FIP provides a guide for proceeding with the troubleshooting.

2.2 Flow of Level 1 FIP



2.3 Error/Status Code List

NOTE

For information about the following FIP items described in "FIP to be referenced" column in the following table, refer to the following:
FIP1.1 through 45: Printer
FIP2.1 through 11: Option Duplex
FIP3.1 through 15: Option OCT
FIP4.1 through 12: Option 550 Paper Feeder

Status Code	Error Contents	Error Description	FIP to be referenced
STATUS 1-5	Cassette Fail	- Paper size is not specified.	FIP1.13 FIP4.1
STATUS 1-6	Xero Fail	- EP CARTRIDGE is not installed, or incorrectly installed. - EP CARTRIDGE out of specifications is installed.	FIP1.11
STATUS 2-1	NVM Abnormality	- Failure of the NVRAM occurred at powering on. - Write error to the NVRAM occurred.	FIP1.1
STATUS 2-2	Fan Motor Abnormality	- Abnormal rotation or other failure of the FAN MAIN or FAN SUB occurred.	FIP1.4
STATUS 2-3	Main Motor Abnormality	- Rotation of MAIN MOTOR does not reach the specified speed.	FIP1.5
STATUS 2-4	ROS Motor Abnormality	- Interval of /BD signal after ROS Motor starts is delayed from the specified value. - Interval of /BD signal became delayed from the specified value after it reached the specified value. - Laser beam output is not the specified level.	FIP1.2
STATUS 2-6	Fuser Abnormality	- Fuser does not reach the specified temperature after the specified time. - Fuser Lamp lights for ten seconds or more in standby. - Fuser temperature became 125 °C or lower during printing. - Fuser temperature became 220 °C or higher. -The thermistor (thermal sensor) have break.	FIP1.3
STATUS 3-1	JS0	STATUS 3-1 to 3-5 indicates JAM by combination of Table 1-1.	-
STATUS 3-2	JS1		
STATUS 3-3	JS2		
STATUS 3-4	JS3		
STATUS 3-5	JS4		

Status Code	Error Contents	Error Description	FIP to be referenced
STATUS 3-6	Paper Size Mismatch	- Paper size detected by the Paper Size Switch or set in the NVRAM does not match the paper length obtained from ON time of Regi Sensor at feeding.	FIP1.12
STATUS 15-1	Xero Warning	- Remaining toner in EP CARTRIDGE became low.	FIP1.16
STATUS 15-3	Near end of paper in Tray 4	- Remaining paper in Tray 4 became low.	FIP4.3
STATUS 15-4	Near end of paper in Tray 3	- Remaining paper in Tray 3 became low.	FIP4.3
STATUS 15-5	Near end of paper in Tray 2	- Remaining paper in Tray 2 became low.	FIP1.15
STATUS 15-6	Fuser Life Warning	- Fuser printed more than 200,000 sheets of paper.	FIP1.17
STATUS 16-1	Face Up Tray Fail	- Face Up Tray is not correctly installed in Duplex or OCT mode.	FIP1.44
STATUS 16-3	Option Tray Unit Fail	- Option Tray is not installed when Option Tray is selected.	FIP4.4
STATUS 16-4	Full Stack (500 Paper Exit)	- 500 Paper Exit became Full Stack.	FIP1.45
STATUS 16-5	Full Stack (OCT)	-Option OCT became Full Stack.	FIP3.6
STATUS 17-1	Top/Rear Cover Open	-COVER OPEN or COVER REAR 500 is open.	FIP1.6
STATUS 17-2	OCT Cover Open	- Cover of Option OCT is open.	FIP3.1
STATUS 17-3	Duplex Cover Open	-Cover of Option Duplex is open.	FIP2.1
STATUS 17-4	Inappropriate Opt FDR	- Inappropriate Option Feeder is detected.	FIP4.5
STATUS 17-5	OCT Unit Fail	- Option OCT is not installed when OCT mode is selected.	FIP3.2 FIP3.7
STATUS 17-6	Duplex Unit Fail	- Option Duplex removed after powering on.	FIP2.2 FIP2.7
STATUS 21-1	Illegal Size (Duplex/OCT)	- Paper size that is not supported in Duplex or OCT mode is selected.	FIP2.6 FIP3.5
STATUS 21-3	NO Paper in Tray 4	-No paper in Tray 4	FIP4.2
STATUS 21-4	NO Paper in Tray 3	-No paper in Tray 3	FIP4.2
STATUS 21-5	NO Paper in Tray 2	-No paper in Tray 2	FIP1.14
STATUS 21-6	NO Paper in Tray 1	-No paper in Tray 1	FIP1.14

JS4	JS3	JS2	JS1	JS0	Contents of Jam	Error Description	FIP to be referred
1	0	0	0	1	Exit Jam 1	Paper Jam/Exit -When the paper was not fed to Exit Sensor within the specified time. - When Exit Sensor turned ON in warming up.	FIP1.8
1	1	0	0	1	Exit Jam 2	Paper Jam/Exit - When paper was not fed to Exit Sensor within the specified time after SENSOR REGI OFF.	FIP1.8
0	0	0	0	1	Exit Jam 3	Paper Jam/Exit - When the paper was fed out from Exit Sensor earlier than the specified time.	FIP1.8
0	0	0	1	0	Feed Jam 1 (Early Feed Jam)	Paper Jam/Tray to Regi -When the paper was fed to Regi Sensor earlier than the specified time. -Paper interval became narrow than the specified time because of the two or more papers are fed at a time. -Paper size error. The paper longer than Legal 14” is used.	FIP1.9
0	1	0	1	0	Feed Jam 2 (Misfeed Jam)	Paper Jam/Misfeed -When the paper did not reach Regi position within the specified time.	FIP1.10
0	1	0	1	1	Reg. Jam 1	Paper Jam/Regi to Fuser -When the paper did not reach Fuser from Regi position within the specified time.	FIP1.7
1	0	0	1	1	Reg. Jam 2	Paper Jam/Regi to Fuser - When Regi Sensor turned ON in warming up.	FIP1.7
0	0	1	0	0	Duplex Jam 1	Paper Jam/Dup to Regi -When the paper reached Regi position from Duplex Sensor earlier than the specified time.	FIP2.4
0	1	1	0	0	Duplex Jam 2	Paper Jam/Exit to Dup -When the paper did not reach Duplex Sensor within the specified time.	FIP2.3
1	0	1	0	0	Duplex Jam 3	Paper Jam/Dup to Regi -When the paper was not fed to Duplex Sensor within the specified time. - When Duplex Sensor turned ON in warming up.	FIP2.4
1	1	1	0	0	Duplex Jam 4 (Misfeed Jam)	Paper Jam/Misfeed -When the paper did not reach Regi position from Duplex Sensor within the specified time.	FIP2.5
0	1	1	0	1	OCT Jam 1	Paper Jam/Exit to OCT - When the paper did not reach to OCT Sensor from Exit Sensor within the specified time.	FIP3.3
1	0	1	0	1	OCT Jam 2	Paper Jam/OCT -When the paper was not fed to OCT Sensor within the specified time. - When OCT Sensor turned ON in warming up.	FIP3.4

3. Level 2 FIP

3.1 Level 2 FIP

The Level 2 FIP is the diagnostic procedure to sort various troubles in addition to the error codes. When troubleshooting, executing the steps given in the FIP or checkout procedure allows you to quickly find the cause of a problem.

4. Error Code FIP

4.1 Level 1 FIP

FIP1.1 NVM Error

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19)		
1	Does Error occur when the power is turned ON?	Go to step 4.	Go to step 2.
2	Does Error still occur when the power is turned OFF and ON again?	Go to step 4.	Go to step 3.
3	Does Error still occur after several ON/OFF procedures of the power?	Go to step 4.	End of work *1
4	Checking HVPS/MCU non-volatile memory setup mode Is non-volatile memory setup mode accessible? Check using Chapter 2 Diagnostic [ADJUSTMENT PARAMETER INTIALIZE MODE].	Go to step 5.	Replace HVPS/MCU. (RRP12.10)
5	Checking NV RAM for data setup Are all NVRAM data set appropriately? Check using Chapter 2 Diagnostic [ADJUSTMENT PARAMETER INTIALIZE MODE].	Go to step 7.	Go to step 6.
6	Checking Error after changing HVPS/MCU data setup Change NV RAM data to the correct setup value, and then turn the power ON again. Does Error still occur?	Replace HVPS/MCU, then go to step 7. (RRP12.10)	End of work
7	Checking after replacing HVPS/MCU Does Error occur?	Go to FIP1.42 Electrical Noise.	End of work

*1: Though some kind of foreign noise would be possible cause, go to [FIP1.42 Electrical Noise] and check, to make sure.

FIP1.2 ROS Error

Step	Check	Yes	No
	Possible causes: ROS ASSY (PL8.1.1) HVPS/MCU (PL12.1.19) EP CARTRIDGE HARNESS ASSY ROS (PL8.1.2) LVPS (PL12.1.5)		
1	Checking NVRAM for data setup value. Are the values of NV03 (resolution) and the value of NV04 (Laser Diode output) set at the initial setup value in the factory? Check using Chapter 2 Diagnostic [ADJUSTMENT PARAMETER INITIALIZE MODE].	Go to FIP1.26 ROS ASSY.	Set NV03 and NV04 to factory setup, and then check again. If Error still occurs, go to FIP1.26 ROS ASSY.

FIP1.3 Fuser Error

Step	Check	Yes	No
	Possible causes: FUSER ASSY (PL8.1.20) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) HARNESS ASSY FUSER (PL8.1.17) HARNESS ASSY LVPS (PL12.1.1)		
1	Checking the thermistor for operation. Does Error occur soon after the power is turned ON? Error occurs as soon as the power is turned ON, or just after the time when a short warm up period elapsed.	Replace FUSER ASSY. (RRP8.8)	Go to FIP1.27 FUSER ASSY.

FIP1.4 Fan Error

Step	Check	Yes	No
	Possible causes: FAN MAIN (PL1.1.14) FAN SUB (PL8.1.5) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking FAN MAIN for rotation (1). Does FAN MAIN rotate, when the power is turned ON?	Go to step 2.	Go to step 5.
2	Checking FAN SUB for rotation (1). Does FAN SUB rotate, when the power is turned ON?	Go to step 3.	Go to step 9.
3	Checking FAN MAIN for rotation (2). Does FAN MAIN rotate in high-speed? Check using Chapter 2 Diagnostic [Fan Motor, High Speed Test].	Go to step 4.	Go to step 5.
4	Checking FAN SUB for rotation (2). Does FAN SUB rotate in high-speed? Check using Chapter 2 Diagnostic [Fan Motor, High Speed Test].	Replace HVPS/ MCU, and watch FUN SUB for a while. (RRP12.10)	Go to step 9.
5	Checking the power to FAN MAIN. Is FAN MAIN connected correctly, and is the voltage across P/J24-18(+) and P/J24-17(-), 24 VDC? (12 VDC, when half-speed)?	Go to step 6.	Go to step 7.
6	Checking the FAN ALARM signal (1). Is the voltage across P/J24-17(+) and P/J24-16(-), 0.82 VDC or more?	Replace FAN MAIN. (RRP12.6)	Replace HVPS/ MCU. (RRP12.10)
7	Checking after replacing FAN MAIN Replace the FAN MAIN. Does FAN Error occur when the power is turned ON?	Go to step 8.	End of work
8	Checking after replacing LVPS Replace the LVPS. Does FAN Error occur when the power is turned ON?	Replace HVPS/ MCU. (RRP12.10)	End of work
9	Checking the power to FAN SUB Is FAN SUB connected correctly, and is the voltage across P/J27-19(+) and P/J27-18(-), 24 VDC? (12 VDC, when half-speed)?	Go to step 10.	Go to step 11.
10	Checking the FAN ALARM signal Is the voltage across P/J27-18(+) and P/J27-17(-), 0.82 VDC or more?	Replace FAN SUB (RRP8.2)	Replace HVPS/ MCU. (RRP12.10)
11	Checking after replacing FAN SUB Replace the FAN SUB. Does FAN Error occur when the power is turned ON?	Go to step 12.	End of work
12	Checking after replacing LVPS Replace the LVPS. Does FAN Error occur when the power is turned ON?	Replace HVPS/ MCU. (RRP12.10)	End of work

FIP1.5 Main Motor Error

Step	Check	Yes	No
	Possible causes: MAIN MOTOR (PL11.1.2) GEAR ASSY HOUSING (PL11.1.3) GEAR ASSY PLATE (PL11.1.10) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking MAIN MOTOR installation Are MAIN MOTOR, GEAR ASSY HOUSING and GEAR ASSY PLATE installed correctly?	With tool Go to step 2. Without tool Go to step 3.	Reinstall obstructive parts.
2	Checking MAIN MOTOR for operation Does the MAIN MOTOR rotate, and each gear rotate normally? Check using Chapter 2 Diagnostic [Main Motor Test]. Remove COVER LEFT (PL1.1.6) to check.	Replace HVPS/MCU. (RRP12.10)	Go to step 3.
3	Checking GEAR ASSY HOUSING and GEAR ASSY PLATE for operation. Does each gear rotate normally? Rotate and check each gear of GEAR ASSY HOUSING and GEAR ASSY PLATE.	Go to FIP1.25 MAIN MOTOR.	Replace the obstructive parts.

FIP1.6 Cover Error

Step	Check	Yes	No
	Possible causes: INTERLOCK S/W 24V (PL8.1.11) INTERLOCK S/W 5V (PL8.1.12) INTERLOCK S/W REAR (PL12.1.7) SWITCH I/L ASSY (PL1.1.11) COVER OPEN (PL1.1.2) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking COVER OPEN and COVER REAR Are the tabs to push down INTERLOCK S/W 24V, 5V, and REAR, and SWITCH I/L ASSY damaged? Open COVER OPEN and COVER REAR to check.	Replace COVER OPEN or COVER REAR.	With tool Go to step 2. Without tool Go to FIP1.32,33,34, and 35 INTER-LOCK S/W.
2	Checking INTERLOCK S/W 24V and 5V on function Does the number on Sensor/Switch Check increase by one, every time INTERLOCK S/W is pushed while pressing down the SWITCH I/L ASSY with a finger? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Go to step 3.	Go to FIP1.32 and 33 INTERLOCK S/W.
3	Checking INTERLOCK REAR on function Does the number on Sensor/Switch Check increase by one, every time INTERLOCK S/W REAR is pushed while pressing down the INTERLOCK S/W 24V with a finger? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Go to step 4.	Go to FIP1.34 INTERLOCK S/W.
4	Checking SWITCH I/L ASSY on function Does the number on Sensor/Switch Check increase by one, every time SWITCH I/L ASSY is pushed while pressing down both INTERLOCK S/W 24V and 5V with the finger? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to FIP1.33 and 35 INTERLOCK S/W.

FIP1.7 FIP Paper Jam/Regi to Fuser

Step	Check	Yes	No
	Possible causes: FUSER ASSY (PL8.1.20) HVPS/MCU (PL12.1.19) CLUTCH REGI (PL5.1.23) BTR ASSY (PL8.1.21) EP CARTRIDGE GEAR ASSY HOUSING (PL11.1.3) HARNESS ASSY FUSER (PL8.1.17) LVPS (PL12.1.5) 150 FEEDER ASSY (PL5.1.1) GUIDE ASSY CRU R (PL8.1.25)		
1	Checking the paper condition Is the paper in the tray crumpled or damaged?	Replace the paper with a new and dry one.	Go to step 2.
2	Checking paper size setup Does the paper size in use match the size setup by GUIDE ASSY END or by the Driver on the PC?	Go to step 3.	Replace the paper, or change the paper size set.
3	Checking paper position (1) Does the front end of paper touch with Actuator Exit in FUSER ASSY? Open COVER OPEN (PL1.1.2) to check.	Go to step 7.	Go to step 4.
4	Checking paper position (2) Does the front end of paper go through the Heat Roll / Pressure Roll in FUSER ASSY? Remove EP CARTRIDGE to check.	Replace HVPS/ MCU. (RRP12.10)	Go to step 5.
5	Checking paper position (3) Does the front end of paper go through BTR ASSY?	Go to step 15.	Go to step 6.
6	Checking paper position (4) Does the front end of paper go between ROLL REGI METAL (PL5.1.34) and ROLL REGI RUBBER (PL5.1.12)?	Go to step 14.	Go to step 19.
7	Checking Actuator Exit for operation Does Actuator Exit move smoothly, when touching Actuator Exit with a finger inserted from the exit of FUSER ASSY, and moving it up and down? Remove EP CARTRIDGE to check.	With tool Go to step 8. Without tool Go to step 9	Replace FUSER ASSY. (RRP8.8)
8	Checking Exit Sensor for operation (1) Does the number of Sensor/Switch Check increase, every time Actuator Exit is pushed and released? Check using Chapter 2 Diagnostic [Sensor /Switch Check]. Remove EP CARTRIDGE to check.	Replace HVPS/ MCU. (RRP12.10)	Go to step 10.
9	Checking Exit Sensor for operation (2) Is the voltage across P/J46-5(+) and P/J46-4(-) on LVPS, 0VDC when Actuator Exit is pushed, and 3.3VDC when released? Remove EP CARTRIDGE to check.	Replace LVPS. (RRP12.3)	Go to step 10.

Step	Check	Yes	No
10	Checking HARNESS ASSY FUSER for continuity Warning; Start the operation after the FUSER ASSY have cooled down. Disconnect P/J46 from LVPS. Remove FUSER ASSY. (RRP8.8) Is there continuity between P/J46 and P/J4647?	Go to step 11.	Replace HARNESS ASSY FUSER.
11	Checking the power to Exit Sensor Is the voltage across P/J46-3(+) and P/J46-4(-), 3.3 VDC?	Go to step 13.	Go to step 12.
12	Checking LVPS for continuity Is there continuity between P/J41-1 and P/J46-3?	Go to FIP1.24 LVPS.	Replace LVPS. (RRP12.3)
13	Checking FUSER ASSY roll for operation Warning; Start the operation after the FUSER ASSY have cooled down. Remove FUSER ASSY. (RRP8.8) Do the gear and the roll of FUSER ASSY rotate smoothly? Turn the gear of the heater roller of FUSER ASSY with a finger to check.	Replace LVPS. (RRP12.3)	Replace FUSER ASSY. (RRP8.8)
14	Checking BTR ASSY for shape Remove BTR ASSY. (RRP8.10) Are there any abnormalities in BTR ASSY? Check the shape, shaft and Bearing BTR of BTR ASSY.	Go to step 15.	Replace BTR ASSY. (RRP8.10)
15	Checking GUIDE ASSY CRU R Is GUIDE ASSY CRU R damaged or stained?	Clean or replace GUIDE ASSY CRU R. (RRP8.13)	Go to step 16.
16	Checking GUIDE ASSY CRU R for continuity Remove GUIDE ASSY CRU R. (RRP8.13) Is each harness continuous?	Go to step 17.	Replace GUIDE ASSY CRU R. (RRP8.13)
17	Checking after replacing HVPS/MCU Replace HVPS/MCU. (RRP12.10) Carry out a test printing. Does the same trouble occur? Check by Chapter 2 Diagnostic [TEST PATTERN MODE MENU].	Go to step 18.	End of work
18	Checking after replacing EP CARTRIDGE Replace EP CARTRIDGE. Does the similar trouble occur, when the test printing is done? Check using Chapter 2 Diagnostic [TEST PATTERN MODE MENU].	Go to step 19.	End of work
19	Checking ROLL REGI METAL (PL5.1.34) and ROLL REGI RUBBER (PL5.1.12) for operation Do ROLL REGI METAL and ROLL REGI RUBBER rotate smoothly? Turn ROLL REGI METAL and ROLL REGI RUBBER with a finger to check.	Go to step 20.	Replace 150 FEEDER ASSY. (RRP5.1)

Step	Check	Yes	No
20	Checking GLUTCH REGI for function Does CLUTCH REGI function appropriately? Check using Chapter 2 Diagnostic [Regi. Roll Clutch Test].	Go to step 21.	Go to FIP1.38 CLUTCH REGI.
21	Checking GEAR ASSY HOUSING operation (1) Remove EP CARTRIDGE. Install COVER ASSY and close it. Does each gear rotate normally? Check using Chapter 2 Diagnostic [Main Motor Test].	Replace HVPS/ MCU. (RRP12.10)	Go to step 22.
22	Checking GEAR ASSY HOUSING operation (2) Does each gear rotate smoothly? Remove GEAR ASSY HOUSING to check. (RRP11.3)	Replace GEAR ASSY HOUS-ING. (RRP11.3)	Replace the trouble gear.

FIP1.8 Paper Jam/Exit

Step	Check	Yes	No
	Possible causes: FUSER ASSY (PL8.1.20) HVPS/MCU (PL12.1.19) HARNESS ASSY FUSER (PL8.1.17) MOTOR ASSY EXIT (PL10.1.15) LVPS (PL12.1.5) ROLL PINCH EXIT (PL10.1.23) 500 EXIT ASSY (PL10.1.2) 150 PAPER CASSETTE (PL2.1.50) 550 PAPER CASSETTE (PL4.1.50)		
1	Checking the paper condition. Is the paper crumpled, damaged or damp?	Replace the paper with a new and dry one.	Go to step 2.
2	Checking the paper size setup. Does the paper size in use match the size setup by GUIDE ASSY END or by the driver on the PC?	Go to step 3.	Replace the paper, or set up the paper size correctly.
3	Does Error occur when the power is turned ON?	Go to step 4.	Go to step 6.
4	Checking the paper in Actuator Exit. Is there any remaining paper in Actuator Exit?	Remove the paper, and go to step 5.	Go to step 8.
5	Does Error occur when the power is turned ON?	Go to step 8.	Go to step 6.
6	Run a test print. Does Error occur? Check using Chapter 2 Diagnostic [TEST PATTERN MODE MENU].	Go to step 7.	End of work
7	Checking ROLL PINCH EXIT. Remove COVER TOP ASSY (PL1.1.7). (RRP1.4) Is ROLL PINCH EXIT not damaged, and rotating smoothly? Does SPRING PINCH EXIT attach? Turn ROLL EXIT with a finger to check.	Go to step 8.	Replace ROLL PINCH EXIT.
8	Checking ROLL EXIT (PL10.1.12) for rotation. Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Turn the power ON. Does ROLL EXIT rotate smoothly during warm up?	Go to step 9.	500 EXIT ASSY. (RRP10.2)
9	Checking Actuator Exit for operation. Remove EP CARTRIDGE. Does Actuator Exit move smoothly, when touching Actuator Exit with a finger inserted from the exit of FUSER ASSY, and moving it up and down?	With tool Go to step 10. Without tool Go to step 11.	Replace FUSER ASSY. (RRP8.8)
10	Checking Exit Sensor for operation (1). Remove EP CARTRIDGE. Does the number of Sensor/Switch Check increase by one, every time Actuator Exit is pushed and released? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/ MCU. (RRP12.10)	Go to step 11.

Step	Check	Yes	No
11	Checking Exit Sensor for operation (2). Remove EP CARTRIDGE. Is the voltage across P/J46-5(+) and P/J46-4(-) on LVPS, 0VDC when Actuator Exit is pushed, and 3.3VDC when released?	Go to step 14.	Go to step 12.
12	Checking the power to Exit Sensor. Is the voltage across P/J46-3(+) and P/J46-4(-), 3.3VDC?	Replace LVPS. (RRP12.3)	Go to step 13.
13	Checking LVPS for continuity. Is there continuity between P/J41-1 and P/J46-3?	Go to FIP1.24 LVPS.	Replace LVPS. (RRP12.3)
14	Checking HARNESS ASSY LVPS for continuity. Disconnect P/J11 on HVPS/MCU. Disconnect P/J41 on LVPS. Is there continuity between J11-10 and J41-7?	Replace LVPS. (RRP12.3)	Replace HARNESS ASSY LVPS.

FIP1.9 Paper Jam/Tray to Regi

Step	Check	Yes	No
	Possible causes: 150 FEEDER ASSY (PL5.1.1) 150 PAPER CASSETTE (PL2.1.50) SENSOR REGI (PL5.1.30) ACTUATOR B (PL5.1.17) CHUTE ASSY FDR1 (PL5.1.3) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) CHUTE ASSY FDR2 (PL7.1.21, PL20.2.2) CLUTCH ASSY PH (PL5.1.21, PL7.1.20, PL20.2.21) ROLL ASSY RETARD (PL2.1.2, PL4.1.2, PL20.3.2) CLUTCH PR-REGI (PL20.2.22) 550 FEEDER OPION (PL20.2.1) 550 FEEDER ASSY (PL7.1.10) 550 PAPER CASSETTE (PL4.1.50)		
1	Checking the paper size setup. Does the paper size in use match the size setup by GUIDE ASSY END or by the driver on the PC?	Go to step 2.	Replace the paper, or change the paper size setup.
2	Does Error occur when the power is turned ON?	Go to step 3.	Go to step 5.
3	Checking the paper at ACTUATOR B. Does the paper remain at ACTUATOR B of SENSOR REGI?	Remove the paper, and go to step 4.	Go to FIP1.28 SENSOR REGI.
4	Does Error occur when the power is turned ON?	Go to FIP1.28 SENSOR REGI.	Go to step 5.
5	Checking ROLL ASSY RETARD. Is ROLL ASSY RETARD not damaged, and installed correctly? Check the operation of it assembled each Paper Cassette.	Go to step 6.	Replace ROLL ASSY RETARD (RRP2.1, 4.1, 20.17)
6	Run a test print. Does Error occur, when the test printing is performed with the paper supplied from the Tray 1 or Tray 2? With the Option 550 Paper Feeder is installed, does Error occur, when the test printing is performed with the paper supplied from the Tray 3 or Tray 4? Check using Chapter 2 Diagnostic [TEST PATTERN MODE MENU].	Go to step 7.	End of work
7	Checking the paper position Remove EP CARTRIDGE. Does the front end of paper touch Actuator B of SENSOR REGI?	Go to step 8.	Go to FIP1.28 SENSOR REGI.
8	Checking a tray feeding the paper When running a test print, is the paper supplied from Tray 1 or Tray 2?	With tool Go to step 9. Without tool Go to step 10.	Go to step 11.
9	Checking CLUTCH ASSY PH for operation Does CLUTCH ASSY PH operate normally? Check using Chapter 2 Diagnostic [Tray1/2 Feed Clutch Test].	Go to step 11.	Go to FIP1.39 CLUTCH ASSY PH.

Step	Check	Yes	No
10	Checking CHUTE ASSY FDR1/2 (PL5.1.3, PL7.1.21) for operation Does each gear and roller of CHUTE ASSY FDR1/2 rotate smoothly? Turn each gear and roller with a finger to check.	Go to step 11.	Replace CHUTE ASSY FDR1/2.
11	Checking a paper feeding tray When running a test print, is the paper supplied from Tray 3 or Tray 4?	With tool Go to step 12. Without tool Go to step 13.	Check if the paper is set, and then go to step 8.
12	Checking CLUTCH ASSY PH for operation Does CLUTCH ASSY PH operate normally? Check using Chapter 2 Diagnostic [Option Tray1/2 Feed Clutch Test].	Go to step 14.	Go to FIP1.39 CLUTCH ASSY PH.
13	Checking 550 FEEDER OPTION for operation Does each gear and roller of 550 FEEDER OPTION rotate smoothly? Turn each gear and roller with a finger to check.	Go to step 15.	Replace Option 550 Paper Feeder.
14	Checking CLUTCH PR-REGI for operation Does CLUTCH PR-REGI operate normally? Check using Chapter 2 Diagnostic [Option Feeder1/2 Turn Clutch Test].	Replace HVPS/ MCU. (RRP12.10)	Go to FIP4.12 CLUTCH PR-REGI.
15	Checking ROLL PINCH TURN (PL20.2.14) for operation Does ROLL PINCH TURN rotate smoothly? Turn ROLL PINCH TURN with a finger to check.	Replace HVPS/ MCU. (RRP12.10)	Replace ROLL ASSY TURN (RRP20.13).

FIP1.10 Paper Jam/Misfeed

Step	Check	Yes	No
	Possible causes: 150 FEEDER ASSY (PL5.1.1) 150 PAPER CASSETTE (PL2.1.50) SENSOR REGI (PL5.1.30) ACTUATOR B (PL5.1.17) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19) CLUTCH REGI (PL5.1.23) CHUTE ASSY FDR1 (PL5.1.3) GEAR ASSY HOUSING (PL11.1.3) SENSOR NO PAPER (PL5.1.38, PL7.1.38, PL20.2.33) CHUTE ASSY FDR2 (PL7.1.21, PL20.2.2) PLATE ASSY BTM (PL2.1.10, PL4.1.10, PL20.3.10) ROLL ASSY RETARD (PL2.1.2, PL4.1.2, PL20.3.2) CLUTCH ASSY PH (PL5.1.21, PL7.1.20, PL20.2.21) ROLL ASSY TURN (PL20.2.14) CLUTCH PR-REGI (PL20.2.22) 550 FEEDER ASSY (PL7.1.10) 550 PAPER CASSETTE (PL4.1.50)		
1	Does Error still occur, after removing all the jamming paper from the feeding tray?	Go to step 2.	Go to FIP1.14 Paper out / Tray 1, 2.
2	Checking paper condition Is the paper curled, damaged or damp?	Replace the paper with a new and dry one	Go to step 3.
3	Checking the paper size setup Does the paper size in use match the size setup by GUIDE ASSY END or by the driver on the PC?	Go to step 4.	Replace the paper, or set up the paper size correctly.
4	Checking PLATE ASSY BTM for operation Is PLATE ASSY BTM pushed up, and moved up and down smoothly, when installing Paper Cassette? Remove Paper Cassette. Check if PLATE ASSY BTM is pushed up, while installing Paper Cassette. Push PLATE ASSY BTM down and release, and check the movement. Check visually if PLATE ASSY BTM is incline to right or left.	Go to step 5.	Replace PLATE ASSY BTM. (RRP2.5, 4.5, 20.21)
5	Is Side Guide tightening the paper too much?	Slightly widen the Side Guide, and run the paper again.	Go to step 6.
6	Checking GEAR ASSY HOUSING for rotation Remove EP CARTRIDGE. Does each gear of GEAR ASSY HOUSING rotate normally? Check using Chapter 2 Diagnostic [Main Motor Test].	Go to step 7.	Check operation and mounting of GEAR ASSY HOUSING, and then go to FIP1.25 MAIN MOTOR.

Step	Check	Yes	No
7	Checking paper position Remove EP CARTRIDGE. Does the front end of paper touch ACTUATOR B of SENSOR REGI?	Go to step 8.	Go to FIP1.28 SENSOR REGI.
8	Checking ROLL ASSY RETARD Is ROLL ASSY RETARD clean and installed correctly? Check ROLL ASSY RETARD installed to each Paper Cassette.	Go to step 9.	Replace ROLL ASSY RETARD. (RRP2.1, 4.1, 20.17)
9	Checking the paper feeding tray Is the paper for test printing supplied from Tray 1 or Tray 2?	With tool Go to step 10. Without tool Go to step 11.	Go to step 12.
10	Checking CLUTCH ASSY PH for operation Does CLUTCH ASSY PH operate normally? Check using Chapter 2 Diagnostic [Tray1/2 Feed Clutch Test].	Go to step 12.	Go to FIP1.39 CLUTCH ASSY PH.
11	Checking CHUTE ASSY FDR1/2 for rotation Does each gear and roller of CHUTE ASSY FDR1/2 rotate smoothly? Turn each gear and roller with a finger to check.	Go to step 12.	Replace CHUTE ASSY FDR1/2.
12	Checking the paper feeding tray Is the paper for test printing supplied from Tray 3 or Tray 4?	With tool Go to step 13. Without tool Go to step 14.	Confirm that the paper is set, and then go to step 9.
13	Checking CLUTCH ASSY PH for operation Does CLUTCH ASSY PH operate normally? Check using Chapter 2 Diagnostic [Option Tray1/2 Feed Clutch Test].	Go to step 15.	Go to FIP1.39 CLUTCH ASSY PH.
14	Checking 550 FEEDER OPTION for operation Does each gear and roller of 550 FEEDER OPTION rotate smoothly? Turn each gear and roller with a finger to check.	Go to step 16.	Replace 550 FEEDER OPTION. (RRP20.9)
15	Checking CLUTCH PR-REGI for operation Does Clutch PR-REGI operate normally? Check using Chapter 2 Diagnostic [Option Feeder1/2 Turn Clutch Test].	Replace HVPS/ MCU. (RRP12.10)	Go to FIP4.12 CLUTCH PR-REGI.
16	Checking ROLL ASSY TURN for rotation Does ROLL ASSY TURN rotate smoothly? Turn ROLL ASSY TURN with a finger to check.	Replace HVPS/MCU. (RRP12.10)	Replace ROLL ASSY TURN. (RRP20.13)

FIP1.11 EP Cartridge

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) EP CARTRIDGE GUIDE ASSY CRU R (PL8.1.25)		
1	Checking EP CARTRIDGE (1) Is the EP CARTRIDGE appropriate model? Remove the EP CARTRIDGE to check the model.	Go to step 2.	Replace EP CARTRIDGE.
2	Checking EP CARTRIDGE (2) Install the EP CARTRIDGE again. Does STATUS 1-6 occur again when the power is turned ON?	Go to step 3.	End of work
3	Checking GUIDE ASSY CRU R Remove GUIDE ASSY CRU R. (RRP8.13) Is each harness continuous?	Go to step 4.	Replace GUIDE ASSY CRU R. (RRP8.13)
4	Checking EP CARTRIDGE (3) Replace the EP CARTRIDGE. Does Error occur again when the power is turned ON?	Replace HVPS/MCU. (RRP12.10)	End of work

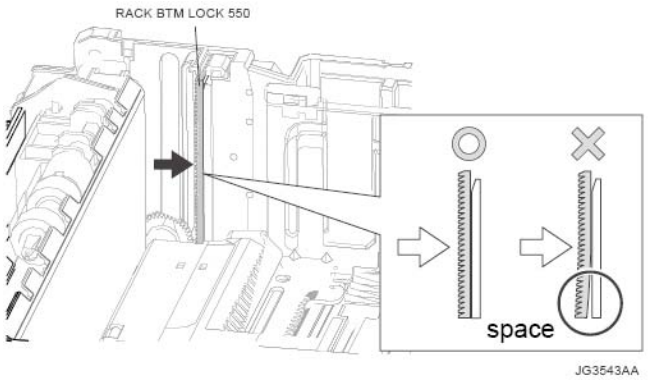
FIP1.12 Paper Size Error

Step	Check	Yes	No
	Possible causes: 150 FEEDER ASSY (PL5.1.1) 150 PAPER CASSETTE (PL2.1.50) SENSOR REGI (PL5.1.30) ACTUATOR B (PL5.1.17) HVPS/MCU (PL12.1.19) GUIDE TRAY LEFT (PL7.1.7) 550 FEEDER ASSY (PL7.1.10) 550 PAPER CASSETTE (PL4.1.50)		
1	Checking the paper size setup Does the paper size in use match the size setup by GUIDE ASSY END or by the driver on the PC?	Go to step 2.	Replace the paper, or change the paper size setting.
2	Checking NVRAM data Does NV01 Configuration 2 meet the specifications?	Go to step 3.	Modify the memory data.
3	Checking Regi Sensor Remove EP CARTRIDGE. Keep the lever of INTERLOCK S/W pushed as opening COVER OPEN (PL1.1.2). Does the number of Sensor/Switch Check increase one by one, when ACTUATOR B of SENSOR REGI is pushed and released? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Go to step 4.	Go to FIP1.28 SENSOR REGI.
4	Checking the paper feeding tray Is the paper supplied from Tray 1 or Tray 2, when Error is occurred?	Go to step 5.	Go to step 6.
5	Checking Paper Cassette (1) Are GUIDE ASSY END, GEAR SECTOR, RACK SIZE, LINK SW SIZE1/2/3 of Paper Cassette of Tray 1 or Tray 2 installed correctly?	Go to FIP2.17 GUIDE TRAY LEFT.	Reinstall the parts causing Error.
6	Checking the paper tray Is the paper supplied from Tray 3 or Tray 4 when Error is occurred?	Go to step 7.	Replace HVPS/ MCU. (RRP12.10)
7	Checking Paper Cassette (2) Are GUIDE ASSY END, GEAR SECTOR, RACK SIZE, LINK SW SIZE1/2/3 of Paper Cassette of Tray 3 or Tray 4 installed correctly?	Go to FIP4.10 OPT ASSY SIZE.	Reinstall the parts causing Error.

FIP1.13 No Tray/Tray 1, 2

Step	Check	Yes	No
	Possible causes: GUIDE TRAY LEFT (PL7.1.7) 150 PAPER CASSETTE (PL2.1.50) HVPS/MCU (PL12.1.19) 550 PAPER CASSETTE (PL4.1.50)		
1	Does Error occur with Tray 3 or Tray 4?	Go to FIP4.1 "No Tray/Tray 3.4".	Go to step 2.
2	Does Error still occur, after removing and reinserting the Paper Cassette of Tray 1 and Tray 2?	Go to step 3.	End of work
3	Checking Paper Cassette Are GUIDE ASSY END, GEAR SECTOR, RACK SIZE, LINK SW SIZE1/2/3 of Paper Cassette of Tray 1 or Tray 2 installed correctly?	Go to FIP2.17 GUIDE TRAY LEFT.	Reinstall the obstructive parts.

FIP1.14 No Paper/Tray 1, 2

Step	Check	Yes	No
	Possible causes: SENSOR NO PAPER (PL5.1.38, PL7.1.38) ACTUATOR NO PAPER (PL5.1.6, PL7.1.14) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) PLATE ASSY BTM (PL2.1.10, PL4.1.10) RACK BTM LOCK 550 (PL4.1.21) HOUSING BASE 550(PL4.1.44)		
1	Does Error Code indicate Tray 3 or Tray 4?	Go to FIP4.2 "No Paper/Tray 3, 4".	Go to step 2.
2	Checking if there is any paper Is there any paper in Tray 1 or Tray 2?	Go to step 3.	Supply paper.
3	Is PLATE ASSY BTM (PL2.1.10, PL4.1.10) lifted correctly?	Go to step 4.	Remove Paper Cassette, and then reinstall it correctly.
4	With pressing down PLATE ASSY BTM, press the center area of RACK BTM LOCK 550 against HOUSING BASE 550. 	Are RACK BTM LOCK 550 and HOUSING BASE 550 touched each other without any space? Go to step 5.	Work over the installation of RACK BTM LOCK 550 again.(RRP4.6)
5	Checking ACTUATOR NO PAPER for operation Remove Paper Cassette. When putting hand from the cassette insertion space to move ACTUATOR NO PAPER, does ACTUATOR NO PAPER move smoothly?	Go to step 6.	Replace ACTUATOR NO PAPER.
6	Checking SENSOR NO PAPER for operation Remove EP CARTRIDGE. Does number of Sensor/Switch Check increase by one, when ACTUATOR NO PAPER is pushed and released? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to FIP2.6 SENSOR NO PAPER.

FIP1.15 Low Paper in Tray/Tray 2

Step	Check	Yes	No
	Possible causes: SENSOR LOW PAPER (PL7.1.4) ACTUATOR LOW PAPER (PL7.1.5) PLATE ASSY BTM (PL4.1.10) HVPS/MCU (PL12.1.19) 550 PAPER CASSETTE (PL4.1.50) 550 FEEDER ASSY (PL7.1.10)		
1	Checking the sensor for operation Does Error still occur, after Paper Cassette filled with a specified amount of paper is inserted into Tray 2?	Go to step 2.	End of work
2	Checking ACTUATOR LOW PAPER for function Remove Paper Cassette. Does ACTUATOR LOW PAPER move smoothly, when moving ACTUATOR LOW PAPER up and down with a finger? Does ACTUATOR LOW PAPER go into the sensor part of SENSOR LOW PAPER, when the flag is pushed up? Does ACTUATOR LOW PAPER go out of the sensor part of SENSOR LOW PAPER, when the flag is released?	Go to step 3.	Replace ACTUATOR LOW PAPER.
3	Checking PLATE ASSY BTM for operation Does PLATE ASSY BTM move ACTUATOR LOW PAPER normally, when PLATE ASSY BTM is pushed or released?	Go to FIP2.7 SENSOR LOW PAPER.	Replace PLATE ASSY BTM. (RRP4.5)

FIP1.16 Drum Life

Step	Check	Yes	No
	Possible causes: EP CARTRIDGE GUIDE ASSY CRU R (PL8.1.25) HVPS/MCU (PL12.1.19)		
1	Checking EP CARTRIDGE Does Error still occur, after installing a new EP CARTRIDGE?	Go to step 2.	End of work
2	Checking GUIDE ASSY CRU R for continuity Remove EP CARTRIDGE. Remove GUIDE ASSY CRU R. (RRP8.13) Is each cable of each harness continuous?	Replace HVPS/MCU. (RRP12.10)	Replace GUIDE ASSY CRU R. (RRP8.13)

FIP1.17 Fuser Life

Step	Check	Yes	No
	Possible causes: FUSER ASSY (PL8.1.20) HARNESS ASSY FUSER (PL8.1.17) HVPS/MCU (PL12.1.19)		
1	Checking FUSER ASSY Does Error still occur, after installing a new FUSER ASSY and sending RESET FUSER LIFE WARNING command? Checks by sending RESET FUSER LIFE WARNING Command from Controller section to MCU section of HVPS/MCU, using Chapter 2 Diagnostic [FUSER WARNING COUNT RESET].	Replace HVPS/ MCU. (RRP12.10)	End of work

FIP1.18 No Power

Step	Check	Yes	No
	Possible causes: POWER CORD (PL12.1.23) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19) OPERATION PANEL (PL1.1.1) HARNESS ASSY PANEL (PL1.1.10) INTERLOCK S/W 24V (PL8.1.11) INTERLOCK S/W 5V (PL8.1.12) INTERLOCK S/W REAR (PL12.1.7) FAN MAIN (PL1.1.14) FAN SUB (PL8.1.5) ROS ASSY (PL8.1.1) FUSER ASSY (PL8.1.20) GEAR ASSY HOUSING (PL11.1.3) MAIN MOTOR (PL11.1.2) CLUTCH REGI (PL5.1.23) PWBA ESS (PL12.1.13) PWBA FEEDER 550 (PL20.1.34) PWBA DUPLEX (PL21.1.32) CLUTCH ASSY PH (PL5.1.21, PL7.1.20, PL20.2.21) CLUTCH PR-REGI (PL20.2.22)		
1	Checking POWER CORD for continuity Is each cable of POWER CORD continuous?	Go to step 2.	Replace POWER CORD.
2	Checking AC power source Does the voltage of AC power source meet commercial voltage?	Go to step 3.	Ask the customer to arrange the AC power source.
3	Checking the fuse Remove SHIELD PLATE LVPS (PL12.1.3). (RRP12.1) Is the fuse on LVPS open?	Replace LVPS. (RRP12.3)	Go to step 4.
4	Checking Option 550 Paper Feeder (PL20) Do two fans rotate, when the power is turned ON? Remove Option 550 Paper Feeder to check.	Go to FIP4.7,8 PWBA FEEDER 550, FIP1.39 CLUTCH ASSY PH, and FIP4.12 CLUTCH PR-REGI.	Go to step 5.
5	Checking Option Duplex (PL21) Do two fans rotate, when the power is turned ON? Remove Option Duplex to check.	Go to FIP2.8 PWBA DUPLEX, and FIP2.9 MOTOR DUPLEX.	Go to step 6.
6	Checking 24 V power line Remove SHIELD PLATE HVPS (PL12.1.18). Check if P/J10 is connected to HVPS/MCU. Remove EP CARTRIDGE. Check each of the following for 24VDC. P/J10-1(+) and P/J10-4(-) P/J10-2(+) and P/J10-5(-) P/J10-3(+) and P/J10-6(-) P/J10-8(+) and P/J10-7(-)	Go to step 7.	Go to FIP1.24 LVPS.

Step	Check	Yes	No
7	Checking CLUTCH REGI (PL5.1.23) Remove SHIELD PLATE HVPS (PL12.1.18). Disconnect P/J243. Remove EP CARTRIDGE. Does FAN MAIN rotate, when the power is turned ON?	Go to FIP1.38 CLUTCH REGI.	Go to step 8.
8	Checking OPERATION PANEL Disconnect HARNESS ASSY PANEL from PWBA ESS. Remove EP CARTRIDGE. Does FAN MAIN rotate, when the power is turned ON? Check with the wind from exhaust on back of the printer.	Go to step 9.	Go to step 10.
9	Checking HARNESS ASSY PANEL for continuity Disconnect HARNESS ASSY PANEL from PWBA ESS. Is there any open circuit or short circuit on the harness, and is every cable continuous?	Replace OPERATIONAL PANEL. (RRP1.4)	Replace HARNESS ASSY PANEL.
10	Checking ROS ASSY Disconnect P/J13, P/J14, P/J16 and P/J17 from HVPS/MCU. Remove EP CARTRIDGE. Does FAN MAIN rotate, when the power is turned ON?	Replace ROS ASSY. (RRP8.1)	Go to step 11.
11	Checking PWBA FEEDER Disconnect P/J20 from HVPS/MCU. Remove EP CARTRIDGE. Does FAN MAIN rotate, when the power is turned ON?	Replace PWBA FEEDER 550. (RRP20.8)	Go to step 12.
12	Checking INTERLOCK S/W Disconnect P/J44 and P/J45 from LVPS. Are the followings continuous when pushing the lever of INTERLOCK S/W, and not continuous when releasing? P/J44-1 and P/J44-3 P/J45-1 and P/J45-3	Go to step 13.	Replace INTERLOCK S/W. (RRP8.5, 12.5)
13	Checking SWITCH I/L ASSY Disconnect P/J411. Is it continuous between P/J411-2 and P/J411-1, when SWITCH I/L ASSY is pushed, and is not when released?	Go to step 14.	Replace SWITCH I/L ASSY. (RRP1.6)
14	Checking CLUTCH ASSY PH Disconnect P/J242 and P/J247 from HARNESS ASSY TRAY 1/2. Remove EP CARTRIDGE. Does the FAN MAIN rotate, when the power is turned ON?	Go to FIP1.39 CLUTCH ASSY PH.	Go to step 15.
15	Checking MAIN MOTOR Disconnect P/J43 from LVPS. Remove EP CARTRIDGE. Does FAN MAIN rotate, when the power is turned ON?	Go to FIP1.25 MAIN MOTOR.	Go to step 16.
16	Checking FAN MAIN Replace FAN MAIN. (RRP12.6) Remove EP CARTRIDGE. Does the FAN MAIN rotate, when the power is turned ON?	End of work	Go to step 17.

Step	Check	Yes	No
17	Checking FAN SUB Replace FAN SUB. (RRP8.2) Remove EP CARTRIDGE. Does the FAN SUB rotate, when the power is turned ON?	End of work	Replace HVPS/ MCU. (RRP12.10)

FIP1.19 LCD/LED Display Error

Step	Check	Yes	No
	Possible causes: OPERATION PANEL (PL1.1.1) HARNESS ASSY PANEL (PL1.1.10) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking 3.3VDC power line Is the voltage across the harness of OPERATION PANEL, 3.3 VDC?	Go to step 2.	Go to step 4
2	Checking OPERATION PANEL for continuity (1) Is every cable of HARNESS ASSY PANEL continuous?	Go to step 3.	Replace HARNESS ASSY PANEL.
3	Checking OPERATION PANEL (2) Is the display stable, after replacing OPERATION PANEL? (RRP1.4)	End of work	Replace HVPS/MCU. (RRP12.10)
4	Checking the power to OPERATION PANEL Is the voltage across P/J28-5(+) and P/J28-4(-) on HVPS/MCU, 3.3VDC?	Go to step 5.	Replace HVPS/MCU. (RRP12.10)
5	Checking FCC ASSY ESS for continuity Disconnect P/J28 from HVPS/MCU. Is there continuity between P/J28-5 and P/J280-22? P/J28-4 and P/J280-23?	Replace PWBA ESS. (PL12.1.13)	Replace FCC ASSY ESS. (PL12.1.16)

FIP1.20 Inoperative Keypad

Step	Check	Yes	No
	Possible causes: OPERATION PANEL (PL1.1.1) HARNESS ASSY PANEL (PL1.1.10) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking 3.3 VDC power line Is the voltage across the harness of OPERATION PANEL, 3.3 VDC?	Go to step 2.	Go to step 4.
2	Checking OPERATION PANEL for continuity (1) Is every cable of HARNESS ASSY PANEL continuous?	Go to step 3.	Replace HARNESS ASSY PANEL.
3	Checking OPERATION PANEL (2) Is the display stable, after replacing OPERATION PANEL? (RRP1.4)	End of work	Replace HVPS/MCU. (RRP12.10)
4	Checking the power to OPERATION PANEL Is the voltage across P/J28-5(+) and P/J28-4(-) on HVPS/MCU, 3.3VDC?	Go to step 5.	Replace HVPS/MCU. (RRP12.10)
5	Checking FCC ASSY ESS for continuity Disconnect P/J28 from HVPS/MCU. Is there continuity between P/J28-5 and P/J280-22? P/J28-4 and P/J280-23?	Replace PWBA ESS. (PL12.1.13)	Replace FCC ASSY ESS. (PL12.1.16)

FIP1.21 Other Printer Error

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Run a test print. Is the printer able to test print? Check using Chapter 2 Diagnostic [TEST PATTERN MODE MENU].	Go to step 4.	Go to step 2.
2	Checking LVPS (1) Remove SHIELD PLATE LVPS. (RRP12.1) Remove EP CARTRIDGE. Is the voltage across P/J11-13(+) and P/J11-14(-) on HVPS/ MCU, 5 VDC?	Go to step 3.	Go to FIP1.24 LVPS.
3	Checking LVPS (2) Remove EP CARTRIDGE. Is the voltage across P/J11-16(+) and P/J11-15(-) on HVPS/ MCU, 3.3 VDC?	Replace HVPS/ MCU. (RRP12.10)	Go to FIP1.24 LVPS.
4	Checking the test printing after installing EP CARTRIDGE. Is the printer reset?	Go to FIP1.42 Electrical Noise.	Go to step 5.
5	Checking Interface Cable Does the problem still occur, after replacing Interface Cable to connect the host with the printer?	Go to step 6.	End of work
6	Check after replacing HVPS/MCU Replace HVPS/MCU. (RRP12.10) Does the problem still occur, after replacing HVPS/ MCU?	Let the customer know that possible cause may be in the host computer.	End of work

FIP1.22 Face Up Tray Error

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) SENSOR FACE UP OPEN (PL10.1.25) GATE FU (PL10.2.6) LEVER GATE FU (PL10.2.17)		
1	Checking Actuator for operation Does ACTUATOR FULL STACK in GATE FU move smoothly, when moving LEVER GATE FU up and down?	With tool Go to step 2. Without tool Go to step3.	Replace GATE FU.
2	Checking SENSOR FACE UP for operation Remove EP CARTRIDGE. Does the number of Sensor/Switch Check increase by one, every time moving LEVER GATE FU up and down? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Go to step 3.	Go to FIP1.44 SENSOR FACE UP OPEN.
3	Checking SENSOR FACE UP OPEN for operation Replace SENSOR FACE UP OPEN. Does the problem still occur, after replacing SENSOR FACE UP OPEN?	Replace HVPS/ MCU. (RRP12.10)	End of work

FIP1.23 Full Stack Error/500 Paper Exit

Step	Check	Yes	No
	Possible causes: SENSOR FULL STACK (PL10.1.26) ACTUATOR FULL STACK (PL10.1.10) HVPS/MCU (PL12.1.19)		
1	Checking ACTUATOR FULL STACK for operation Does ACTUATOR FULL STACK in paper feed out section move smoothly?	With tool Go to step 2. Without tool Go to step3.	Replace ACTUATOR FULL STACK.
2	Checking SENSOR FULL STACK for operation (1) Remove EP CARTRIDGE. Does the number of Sensor/Switch Check increase by one, every time pushing and releasing ACTUATOR FULL STACK? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Go to step 3.	Go to FIP1.45 SENSOR FULL STACK.
3	Checking SENSOR FULL STACK for operation (2) Replace SENSOR FULL STACK. Does the problem still occur, after replacing SENSOR FULL STACK?	Replace HVPS/MCU. (RRP12.10)	End of work

4.2 Level 2 FIP

FIP1.24 LVPS

Step	Check	Yes	No
	Possible causes: LVPS (PL12.1.5) HVPS/MCU (PL12.1.19) HARNESS ASSY LVPS (PL12.1.1)		
1	Checking LVPS (PL12.1.5) control power Remove SHIELD PLATE LVPS. (RRP12.1) Disconnect P/J41 from LVPS. Turn the power ON. Check the voltages below are in specified value. P/J41-1(+) and P/J41-2(-): 3.3 V P/J41-4(+) and P/J41-3(-): 5 V	Go to step 2.	Replace LVPS. (RRP12.3)
2	Checking LVPS driving power Disconnect P/J42 from LVPS. Turn the power ON. Is the voltage across P/J42-1(+) and P/J42-2(-), 24 VDC?	Go to step 3.	Go to FIP2.9 INTERLOCK S/W 24V, FIP1.34 INTERLOCK S/W REAR or FIP2.12 SWITCH I/L ASSY.
3	Checking HARNESS ASSY LVPS for continuity Turn the power OFF. Disconnect P/J11 from HVPS/MCU. Disconnect P/J41 from LVPS. Is each cable of J11 and J41 continuous?	Go to step 4.	Replace HARNESS ASSY LVPS.
4	Checking AC power source Is AC power supply outlet appropriately wired and earthed?	Replace HVPS/MCU. (RRP12.10)	Inform the client or the electrician.

FIP1.25 MAIN MOTOR

Step	Check	Yes	No
	Possible causes: MAIN MOTOR (PL11.1.2) HARNESS ASSY LVPS (PL12.1.1) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking MAIN MOTOR Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Does MAIN MOTOR rotate, when the power is turned ON? Check by rotation sound of MAIN MOTOR.	Go to step 2.	Go to step 3.
2	Is the trouble eliminated?	End of work	Go to step 3.
3	Checking HARNESS ASSY LVPS for continuity (1) Remove SHIELD PLATE LVPS. (RRP12.1) Disconnect P/J41 from LVPS. Disconnect P/J11 from HVPS/MCU. Is each cable of P/J41 and P/J11 continuous?	Go to step 4.	Replace HARNESS ASSY LVPS.
4	Checking HARNESS ASSY LVPS for continuity (2) Remove SHIELD PLATE LVPS. (RRP12.1) Disconnect P/J42 from LVPS. Disconnect P/J10 from HVPS/MCU. Is each cable of P/J42 and P/J10 continuous?	Go to step 5.	Replace HARNESS ASSY LVPS.
5	Checking LVPS Replace LVPS. (RRP12.3) Is the trouble eliminated?	End of work	Go to step 6.
6	Checking HVPS/MCU Replace HVPS/MCU. (RRP12.10) Is the trouble eliminated?	End of work	Replace MAIN MOTOR. (RRP11.2)

FIP1.26 ROS ASSY

Step	Check	Yes	No
	Possible causes: ROS ASSY (PL8.1.1) HARNESS ASSY ROS (PL8.1.2) INTERLOCK S/W 5V (PL8.1.12) HARNESS ASSY LVPS (PL12.1.1) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking the power to Laser Diode of ROS ASSY Remove COVER TOP ASSY (PL1.1.7). (RRP1.4) Disconnect P/J140 from ROS ASSY. Install EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Is the voltage across J140-8(+) and J140-7(-), 5 VDC?	Go to step 8.	Go to step 2.
2	Checking INTERLOCK S/W 5V Remove INTERLOCK S/W 5V. Is it continuous between P/J142-1 and P/J142-3, when INTERLOCK S/W 5V is pushed, and is not when released?	Go to step 3.	Replace INTER-LOCK S/W 5V. (RRP8.5)
3	Checking SWITCH I/L ASSY 5V Remove SWITCH I/L ASSY 5V. Is it continuous between P/J144-1 and P/J144-3, when SWITCH I/L ASSY 5 V is pushed, and is not when released?	Go to step 4.	Replace SWITCH I/L ASSY 5V. (RRP1.6)
4	Checking HARNESS ASSY LVPS Disconnect P/J141 of HARNESS ASSY LVPS. Is it conductive between P/J141-1 and P/J141-3 when INTERLOCK S/W 5V and SWITCH I/L ASSY 5V are pushed simultaneously, and is not when released?	Go to step 5.	Replace HAR-NESS ASSY LVPS.
5	Checking HARNESS ASSY ROS Disconnect P/J14 from HVPS/MCU. Disconnect P/J140 from ROS ASSY. Is it continuous between P/J14-1 and P/J140-8, when INTERLOCK S/W 5V and SWITCH I/L ASSY 5V are pushed simultaneously, and is not when released?	Go to step 6.	Replace HAR-NESS ASSY ROS.
6	Checking power to HVPS/MCU Remove SHIELD PLATE LVPS. (RRP12.1) Install EP CARTRIDGE. Disconnect P/J41 from LVPS. Is the voltage across P/J41-4 and P/J41-3, 5 VDC?	Replace LVPS. (RRP12.3).	Go to step 7.
7	Checking HVPS/MCU for continuity Disconnect P/J14 and P/J11 from HVPS/MCU. Is there continuity between P/J14-1 and P/J11-13?	Go to step 8.	Replace HVPS/MCU. (RRP12.10).
8	Checking HARNESS ASSY LVPS for continuity Disconnect P/J11 from HVPS/MCU. Is there continuity between P/J11-13 and P/J41-4?	Go to step 9.	Replace HAR-NESS ASSY LVPS.

Step	Check	Yes	No
9	Checking /ROSMOT ON signal of Scanner Motor Install EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Is P/J13-3(+) and P/J13-2(-) on HVPS/MCU, 0 V just after when the power is turned ON, and 5VDC 10 seconds after stopping MAIN MOTOR?	Go to step 11.	Go to step 10.
10	Checking HARNESS ASSY ROS for continuity Disconnect P/J13 from HVPS/MCU. Is each cable of P/J13 and P/J130 continuous?	Replace HVPS/MCU. (RRP12.10)	Replace HARNESS ASSY ROS.
11	Checking HARNESS ASSY ROS for continuity Disconnect P/J17 and P/J16 from HVPS/MCU. Disconnect P/J170 and P/J160 from ROS ASSY. Is there continuity between P/J17 and P/J170? P/J16 and P/J160?	Go to step 12.	Replace HARNESS ASSY ROS.
12	Checking SOS power circuit of ROS ASSY Disconnect P/J140 from ROS ASSY. Is there continuity between P/J140-8 and P/J201-1? P/J140-6 and P/J201-2? P/J140-7 and P/J201-3?	Go to step 13.	Replace ROS ASSY. (RRP8.1)
13	Checking after replacing HVPS/MCU Replace HVPS/MCU. (RRP12.10) Does the problem still occur, after replacement?	Go to step 14.	End of work
14	Checking after replacing ROS ASSY Replace ROS ASSY. (RRP8.1) Does the problem still occur, after replacement?	Go to FIP1.42 Electrical Noise.	End of work

FIP1.27 FUSER ASSY

Step	Check	Yes	No
	Possible causes: FUSER ASSY (PL8.1.20) HVPS/MCU (PL12.1.19) INTERLOCK S/W 24V (PL8.1.11) HARNESS ASSY FUSER 100V/200V (PL8.1.17) HARNESS ASSY AC100V/200V (PL12.1.8) LVPS (PL12.1.5) HARNESS ASSY LVPS (PL12.1.1)		
1	Checking Heater circuit for continuity Remove SHIELD PLATE LVPS. (RRP12.1) Disconnect P/J47 from LVPS. Is there continuity between J47-1 and J47-5? J47-1 and J47-3?	Go to step 3.	Go to step 2.
2	Checking HARNESS ASSY FUSER for continuity Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Is there continuity between J4647B-3 and J47-1? J4647B-2 and J47-3? J4647B-1 and J47-5?	Replace FUSER ASSY. (RRP8.8)	Replace HARNESS ASSY FUSER. (RRP8.7)
3	Checking Fuser power source voltage Disconnect P/J48 from LVPS. Remove EP CARTRIDGE. Turn the power to ON. Is the voltage across P/J48-1 and P/J48-3, commercial voltage?	Go to step 5.	Go to step 4.
4	Checking AC line voltage Is the AC line voltage the commercial voltage?	Replace HARNESS ASSY AC100V/200V (RRP12.4)	Inform the client or the electrician.
5	Checking Heater Rod ON signal voltage Make sure FUSER ASSY is cooled down. Make sure that EP CARTRIDGE is removed. Is the voltage across P/J41-13(+) and P/J41-12(+) and P/J41-3(-), 0VDC when Heater Rod lights on, and 3.3VDC when off?	Go to step 7.	Go to step 6.
6	Checking HARNESS ASSY LVPS for continuity Disconnect P/J11 from HVPS/MCU. Is there continuity between P/J41-1 and P/J11-16? P/J41-9 and P/J11-8? P/J41-10 and P/J11-7? P/J41-12 and P/J11-5? P/J41-13 and P/J11-4?	Replace HVPS/MCU. (RRP12.10)	Replace HARNESS ASSY LVPS.

Step	Check	Yes	No
7	Checking the resistance of Thermistor of Temperature Sensor Disconnect P/J46 from LVPS. Is the resistance between P/J46-6 and P/J46-7 and P/J46-1 and P/J46-2 about 480 k-ohm in the normal temperature (about 20 °C)?	Go to step 8.	Replace FUSER ASSY. (RRP8.8)
8	Checking after replacing HVPS/MCU Replace HVPS/MCU. (RRP12.10) Does the problem still occur after replacement?	Go to step 9.	End of work
9	Checking after replacing LVPS Replace LVPS. (RRP12.3) Does the problem still occur after replacement?	Replace FUSER ASSY. (RRP8.8)	End of work

FIP1.28 SENSOR REGI

Step	Check	Yes	No
	Possible causes: SENSOR REGI (PL5.1.30) ACTUATOR B (PL5.1.17) 150 FEEDER ASSY (PL5.1.1) HARNESS ASSY TRAY1 (PL5.1.37) HARNESS ASSY CHUTE (PL12.1.17) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking ACTUATOR B for operation and shape Remove 150 FEEDER ASSY. (RRP5.1) Does ACTUATOR B operate smoothly? Is the flag of ACTUATOR B formed normally to shield the Sensor detecting point? Check if the flag of ACTUATOR B is formed normally again, pushing ACTUATOR B by inserting a mini screwdriver from the paper entrance space at the lower and side sections each of 150 FEEDER ASSY.	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR B.
2	Checking SENSOR REGI (1) Connect the connector J241 of HARNESS ASSY TRAY1 to SENSOR REGI, with 150 FEEDER ASSY removed. Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Does the number of Sensor/Switch Check increase by one, by moving ACTUATOR B with a mini screwdriver? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.19)	Go to step 4.
3	Check SENSOR REGI (2) Connect the connector J241 of HARNESS ASSY TRAY1 to SENSOR REGI, with 150 FEEDER ASSY removed. Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Is the voltage across P/J24-11(+) and P/J24-10(-), 3.3 VDC when ACTUATOR B is pushed, and 0 VDC when released? Measure the voltage by moving ACTUATOR B with a mini screwdriver.	Replace HVPS/MCU. (RRP12.19)	Go to step 4.
4	Checking the power to SENSOR REGI Remove EP CARTRIDGE. Is the voltage across P/J24-9(+) and P/J24-10(-) on HVPS/ MCU, about 3.3 VDC?	Go to step 5.	Go to step 7.
5	Checking HARNESS ASSY CHUTE for continuity Disconnect P/J24 from HVPS/MCU. Disconnect P/J245. Is there continuity between J24-9 and J245-10? J24-10 and J245-9? J24-11 and J245-8?	Go to step 6.	Replace HARNESS ASSY CHUTE.

Step	Check	Yes	No
6	Checking HARNESS ASSY TRAY1 for continuity Remove SENSOR REGI. (RRP5.7) Disconnect P/J245. Is there continuity between P/J245-4 and P/J241-3? P/J245-5 and P/J241-2? P/J245-6 and P/J241-1?	Go to step 8.	Replace HARNESS ASSY TRAY1.
7	Checking HVPS/MCU for continuity Disconnect P/J11 from HVPS/MCU. Is there continuity between P/J11-16 and P/J24-9?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)
8	Checking SENSOR REGI (3) Replace SENSOR REGI. (RRP5.7) Does the problem occur after replacement?	Replace HVPS/MCU. (RRP12.10)	End of work

FIP1.29 SENSOR NO PAPER

Step	Check	Yes	No
	Possible causes: SENSOR NO PAPER (PL5.1.38, PL7.1.38) ACTUATOR NO PAPER (PL5.1.6, PL7.1.14) 150 FEEDER ASSY (PL5.1.1) HARNESS ASSY TRAY1 (PL5.1.37) HARNESS ASSY TRAY2 (PL7.1.36) HARNESS ASSY CHUTE (PL12.1.17) HVPS/MCU (PL12.1.19) PLATE ASSY BTM (PL2.1.10, PL4.1.10) LVPS (PL12.1.5) 550 FEEDER ASSY (PL7.1.10)		
1	Checking ACTUATOR NO PAPER for shape and operation Does ACTUATOR NO PAPER operate smoothly? Is the flag between the sensor detecting point when ACTUATOR NO PAPER is low (there is no paper), and out of the detecting point when ACTUATOR NO PAPER is high (there is paper)?	Go to step 2.	Replace ACTUATOR NO PAPER.
2	Checking PLATE ASSY BTM Fit the empty Paper Cassette. Is the flag of ACTUATOR NO PAPER located in between sensor detecting point?	With tool Go to step 3. Without tool Go to step 4.	Replace PLATE ASSY BTM. (RRP2.5, 4.5)
3	Checking SENSOR NO PAPER (1) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Remove Paper Cassette. Put the hand from the tray insertion space, and move ACTUATOR NO PAPER up and down. Does the number increase one by one, as ACTUATOR NO PAPER operates? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HDVS/MCU. (RRP12.10)	Go to step 5.
4	Checking SENSOR NO PAPER (2) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Remove Paper Cassette. Put the hand from the tray insertion space, move ACTUATOR NO PAPER up and down. Is each voltage across P/J24-8(+) and P/J24-7(-) and P/J24-3(+) and P/J24-2(-), 0VDC when ACTUATOR NO PAPER is moved up, 3.3VDC when down?	Replace HDVS/MCU. (RRP12.10)	Go to step 5.
5	Checking the power to SENSOR NO PAPER Remove EP CARTRIDGE. Is each voltage across P/J24-6(+) and P/J24-7(-) and P/J24-1(+) and P/J24-2(-) on HVPS/MCU, 3.3 VDC?	Go to step 6.	Go to step 8.

Step	Check	Yes	No
6	Checking HARNESS ASSY CHUTE for continuity Disconnect P/J24 from HVPS/MCU. Disconnect P/J245 and P/J248. Is there continuity between J24-6 and J245-13? J24-7 and J245-12? J24-8 and J245-11? J24-1 and J248-5? J24-2 and J248-4? J24-3 and J248-3?	Go to step 7.	Replace HARNESS ASSY CHUTE.
7	Checking HARNESS ASSY TRAY1 and HARNESS ASSY TRAY2 for continuity Remove SENSOR NO PAPER. Disconnect P/J24 from HVPS/MCU. Is there continuity between P/J245-1 and P/J240-3? P/J245-2 and P/J240-2? P/J245-3 and P/J240-1? P/J248-1 and P/J246-3? P/J248-2 and P/J246-2? P/J248-3 and P/J246-1?	Go to step 9.	Replace HARNESS ASSY TRAY1 or HARNESS ASSY TRAY2.
8	Checking HVPS/MCU for continuity Disconnect P/J11 from HVPS/MCU. Is there continuity between P/J11-16 and P/J24-6 and P/J11-16 and P/J24-1?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)
9	Checking SENSOR NO PAPER (3) Replace SENSOR NO PAPER. (RRP5.8, 7.6) Does the problem still occur, after replacement?	Replace HVPS/MCU. (RRP12.10)	End of work

FIP1.30 SENSOR LOW PAPER

Step	Check	Yes	No
	Possible causes: SENSOR LOW PAPER (PL7.1.4) ACTUATOR LOW PAPER (PL7.1.5) PLATE ASSY BTM (PL4.1.10) HARNESS ASSY LOW1 (PL7.1.2) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking ACTUATOR LOW PAPER for operation Install Paper Cassette. Does ACTUATOR LOW PAPER operate smoothly, when PLATE ASSY BTP is pushed and released by the hand? Does the flag go into the detection point of the sensor, when PLATE ASSY BTM is released (Actuator is pushed up), and out of the detection point, when pushed down?	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR LOW PAPER.
2	Checking SENSOR LOW PAPER for operation (1) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Remove Paper Cassette. Put the hand in the tray insertion space, move ACTUATOR LOW PAPER. Does the number increase one by one, as ACTUATOR LOW PAPER moves? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HDVS/MCU. (RRP12.10)	Go to step 3.
3	Checking HARNESS ASSY LOW1 for continuity Remove HARNESS ASSY LOW1. Is there continuity between J260 and J26?	Go to step 4.	Replace HARNESS ASSY LOW1.
4	Checking SENSOR LOW PAPER (2) Replace SENSOR LOW PAPER. (RRP7.9) Does the problem still occur, after replacement?	Replace HDVS/MCU. (RRP12.10)	End of work

FIP1.31 SENSOR TONER

Step	Check	Yes	No
	Possible causes: SENSOR TONER (PL5.1.46) SENSOR TONER ASSY (PL5.1.45) HARNESS ASSY TONER1 (PL5.1.50) HARNESS ASSY TONER2 (PL12.1.28) EP CARTRIDGE HVPS/MCU (PL12.1.19)		
1	Checking EP CARTRIDGE (1) Does sufficient toner in EP CARTRIDGE remain?	Go to step 3.	Go to step 2.
2	Checking EP CARTRIDGE (2) Does the problem still occur, after replacing EP CARTRIDGE?	Go to step 3.	End of work
3	Checking SENSOR TONER ASSY installation Is SENSOR TONER ASSY installed correctly, and does HOLDER-D operate smoothly?	Go to step 4.	Replace SENSOR TONER ASSY.
4	Checking HARNESS ASSY TONER1 for continuity Remove HARNESS ASSY TONER1. Is there continuity between J220 and J221?	Go to step 5.	Replace HARNESS ASSY TONER1.
5	Checking HARNESS ASSY TONER2 for continuity Remove HARNESS ASSY TONER2. Is there continuity between J22 and J221?	Go to step 6.	Replace HARNESS ASSY TONER2.
6	Checking SENSOR TONER Replace SENSOR TONER. (RRP5.9) Does the problem still occur, after replacement?	Replace HVPS/MCU. (RRP12.10)	End of work

FIP1.32 INTERLOCK S/W 24V

Step	Check	Yes	No
	Possible causes: INTERLOCK S/W 24V (PL8.1.11) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking INTERLOCK S/W 24V Disconnect P/J45 from LVPS. Is P/J45-1 and P/J45-3 continuous, when INTERLOCK S/W 24V is pushed, and not when released?	Go to FIP1.24 LVPS.	Replace INTER-LOCK S/W 24V. (RRP8.5)

FIP1.33 INTERLOCK S/W 5V, SWITCH I/L ASSY

Step	Check	Yes	No
	Possible causes: INTERLOCK S/W 5V (PL8.1.12) SWITCH I/L ASSY (PL1.1.11) HARNESS ASSY ROS (PL8.1.2) HARNESS ASSY LVPS (PL12.1.1) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking INTERLOCK S/W 5VL Remove INTERLOCK S/W 5VL. Is P/J142-1 and P/J142-3 continuous, when INTERLOCK S/W 5V is pushed, and not when released?	Go to step 2.	Replace INTERLOCK S/W 5VL. (RRP8.5)
2	Checking SWITCH I/L ASSY Remove INTERLOCK S/W 5VR. Is P/J144-1 and P/J144-3 continuous, when INTERLOCK S/W 5VR is pushed, and not when released?	Go to step 3.	Replace SWITCH I/L ASSY. (RRP1.6)
3	Checking HARNESS ASSY LVPS for continuity Disconnect P/J141, P/J142 and P/J144 of HARNESS ASSY LVPS. Is there continuity between J141-3 and P142-1? J141-1 and P144-3? J142-3 and P144-1?	Go to step 4.	Replace HARNESS ASSY LVPS.
4	Checking HARNESS ASSY ROS for continuity Disconnect P/J141, P/J14 and P/J140 of HARNESS ASSY ROS. Is there continuity between P141-1 and J141-1? P141-3 and P140-8?	Go to FIP1.24 LVPS.	Replace HARNESS ASSY ROS.

FIP1.34 INTERLOCK S/W REAR

Step	Check	Yes	No
	Possible causes: INTERLOCK S/W REAR (PL12.1.7) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking INTERLOCK S/W REAR for continuity Disconnect P/J44 from LVPS. Is P/J44-1 and P/J44-3 continuous, when INTERLOCK S/W REAR is pushed, and not when released?	Go to FIP1.24 LVPS.	Replace INTER-LOCK S/W REAR. (RRP12.5)

FIP1.35 SWITCH I/L ASSY (Interlock S/W Front R)

Step	Check	Yes	No
	Possible causes: SWITCH I/L ASSY (PL1.1.11) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking SWITCH I/L ASSY for continuity Disconnect P/J411. Is P/J411-1 and P/J411-2 continuous, when SWITCH I/L ASSY is pushed, and not when released?	Go to step 2.	Replace SWITCH I/L ASSY. (RRP1.6)
2	Checking HARNESS ASSY LVPS for continuity Disconnect P/J11, P/J41 and P/J411. Is there continuity between P411-2 and J41-5? P411-1 and J11-12?	Go to FIP1.24 LVPS.	Replace HARNESS ASSY LVPS.

FIP1.36 PWBA EXIT MOTOR

Step	Check	Yes	No
	Possible causes: PWBA EXIT MOTOR (PL12.1.4) HARNESS ASSY LVPS (PL12.1.1) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking HARNESS ASSY LVPS for continuity Disconnect P/J27, P/J10, P/J102 and P/J101 from HARNESS ASSY LVPS. Is there continuity between J27 and J102?	Go to step 2.	Replace HARNESS ASSY LVPS.
2	Checking PWBA EXIT MOTOR power source voltage. Disconnect P/J101 from PWBA EXIT MOTOR. Is the voltage across J101-2(+) and J101-1(-), 24 VDC?	Go to step 3.	Replace LVPS. (RRP12.3)
3	Checking PWBA EXIT MOTOR. Replace PWBA EXIT MOTOR. (RRP12.2) Is the problem cleared, after replacement?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP1.37 MOTOR ASSY EXIT

Step	Check	Yes	No
	Possible causes: MOTOR ASSY EXIT (PL10.1.15) PWBA EXIT MOTOR (PL12.1.4) HARNESS ASSY LVPS (PL12.1.1) LVPS (PL12.1.5) HVPS/MCU (PL12.1.19)		
1	Checking MOTOR ASSY EXIT for operation. Not using DIAG tool- Replace MOTOR ASSY EXIT. (RRP10.5) Is the problem cleared, after replacement?	End of work	Go to step 3.
	Using DIAG tool- Does the MOTOR ASSY EXIT rotate? Check using Chapter 2 Diagnostic: [Exit Motor, Clockwise Test] [Exit Motor, Counterclockwise, High Speed Test] [Exit Motor, Counterclockwise, Low Speed Test]	End of work	Go to step2.
2	Checking MOTOR ASSY EXIT Replace MOTOR ASSY EXIT. (RRP10.5) Is the problem cleared, after replacement?	End of work.	Go to step 3.
3	Checking HARNESS ASSY LVPS for continuity Disconnect P/J27, P/J10, P/J102 and P/J101 from HARNESS ASSY LVPS. Is there continuity between J27 and J102?	Go to step 4.	Replace HAR-NESS ASSY LVPS.
4	Checking MOTOR ASSY EXIT power source voltage Disconnect P/J101 from PWBA EXIT MOTOR. Is the voltage across J101-2(+) and J101-1(-), 24 VDC?	Go to step 5.	Replace LVPS. (RRP12.3)
5	Checking PWBA EXIT MOTOR Replace PWBA EXIT MOTOR. (RRP12.2) Is the problem cleared, after replacement?	End of work	Replace HVPS/ MCU. (RRP12.10)

FIP1.38 CLUTCH REGI

Step	Check	Yes	No
	Possible causes: CLUTCH REGI (PL5.1.23) HARNESS ASSY CHUTE (PL12.1.17) HARNESS ASSY TRAY1 (PL5.1.37) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking HARNESS ASSY CHUTE for continuity Disconnect P/J24 from HVPS/MCU. Is there continuity between J24-14 and J245-5? J24-15 and J245-4?	Go to step 2.	Replace HARNESS ASSY CHUTE.
2	Checking HARNESS ASSY TRAY1 for continuity Remove CLUTCH REGI. Disconnect P/J245. Is there continuity between P/J245-9 and P/J243-2? P/J245-10 and P/J243-1?	Go to step 3.	Replace HARNESS ASSY TRAY1.
3	Checking the resistance of CLUTCH REGI Is the resistance of the wire wound resistor between P/J243-1 and P/J243-2 of CLUTCH REGI, 172 ohm +/- 10% (at 20 °C)?	Go to step 4.	Replace CLUTCH REGI. (RRP5.6)
4	Checking HVPS/MCU for continuity Disconnect P/J24 and P/J10 from HVPS/MCU. Is J24-14 and J10-1?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)

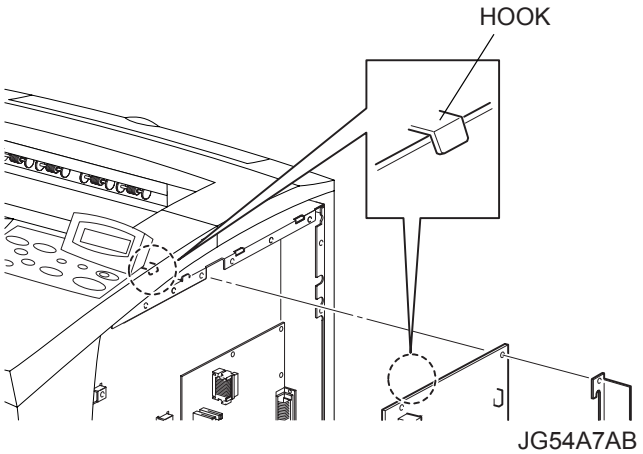
FIP1.39 CLUTCH ASSY PH

Step	Check	Yes	No
	Possible causes: CLUTCH ASSY PH (PL5.1.21, PL7.1.20) HARNESS ASSY TRAY1 (PL5.1.37) HARNESS ASSY TRAY2 (PL7.1.36) HARNESS ASSY CHUTE (PL12.1.17) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking HARNESS ASSY CHUTE for continuity Disconnect P/J24 from HVPS/MCU. Is there continuity between J24-13 and J245-6? J24-12 and J245-7? J24-5 and J248-1? J24-4 and J248-2?	Go to step 2.	Replace HARNESS ASSY CHUTE.
2	Checking HARNESS ASSY TRAY1 and TRAY2 for continuity. Remove CLUTCH ASSY PH. Disconnect P/J245 or P/J248. Is there continuity between P/J245-8 and P/J242-1? P/J245-7 and P/J242-2? P/J248-5 and P/J247-1? P/J248-4 and P/J247-2?	Go to step 3.	Replace HARNESS ASSY TRAY1 or TRAY2.
3	Checking the resistance of CLUTCH ASSY PH Is each resistance of the wire wound resistor between P/J242-1 and P/J242-2, and P/J247-1 and P/J247-2 of CLUTCH ASSY PH, 172 ohm +/-10% (at 20 °C)?	Go to step 4.	Replace CLUTCH ASSY PH. (RRP5.6, 7.5)
4	Checking HVPS/MCU for continuity Disconnect P/J24 and P/J10 from HVPS/MCU. Is there continuity between J24-12 and J10-1? J24-4 and J10-1?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)

FIP1.40 GUIDE TRAY LEFT

Step	Check	Yes	No
	Possible causes: GUIDE TRAY LEFT (PL7.1.7) HARNESS ASSY LVPS (PL12.1.1) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking HARNESS ASSY LVPS for continuity Disconnect P/J18 from HVPS/MCU. Disconnect P/J1821. Is each cable between J18 and J1821 continuous?	Go to step 2.	Replace HARNESS ASSY LVPS.
2	Checking GUIDE TRAY LEFT for continuity Is each cable between Tray1 Size Switch and J1821, and Tray2 Size Switch and J1821 of GUIDE TRAY LEFT continuous?	Go to FIP1.41 HVPS/MCU.	Replace GUIDE TRAY LEFT. (RRP7.8)

FIP1.41 HVPS/MCU

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) GUIDE ASSY CRU R (PL8.1.25) EP CARTRIDGE HARNESS ASSY ANT (PL8.1.24) HARNESS ASSY LVPS (PL12.1.1)		
1	Checking the power by GUIDE ASSY CRU R Is GUIDE ASSY CRU R installed appropriately? Does the conducting part of GUIDE ASSY CRU R make contact with the plate of HVPS/MCU and EP CARTRIDGE appropriately? Confirm whether HVPS/MCU is assembled under the hook of FRAME.  JG54A7AB	Go to step 2.	Replace GUIDE ASSY CRU R. (RRP8.13) Work over the installation of HVPS/MCU again. (RRP12.10)
2	Checking GUIDE ASSY CRU R Remove GUIDE ASSY CRU R. (RRP8.13) Is the Plate Earth of GUIDE ASSY CRU R damaged or soiled?	Go to step 3.	Replace GUIDE ASSY CRU R. (RRP8.13)
3	Checking 24 V to HVPS/MCU Remove EP CARTRIDGE. Is the voltage across P/J10-1(+) and P/J10-4(-) on HVPS/MCU, 24 VDC?	Go to step 5.	Go to step 4.
4	Checking HARNESS ASSY LVPS for continuity Disconnect P/J10 from HVPS/MCU. Disconnect P/J42 from LVPS. Is there continuity between P/J10 and P/J42?	Go to FIP1.24 LVPS.	Replace HARNESS ASSY LVPS.
5	Checking HARNESS ASSY ANT for continuity Disconnect P/J15 from HVPS/MCU. Is J15 and J150?	Replace HVPS/MCU. (RRP12.10)	Replace HARNESS ASSY ANT.

FIP1.42 Electrical Noise

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) GUIDE ASSY CRU R (PL8.1.25) FUSER ASSY (PL8.1.20) EP CARTRIDGE HARNESS ASSY ANT (PL8.1.24) HARNESS ASSY AC100V/200V (PL12.1.8) HARNESS ASSY LVPS (PL12.1.1) Option 550 Paper Feeder PWBA FEEDER 550 (PL20.1.34) PWBA DUPLEX (PL21.1.32)		
1	Checking a foreign noise Are there any other electrical appliances within 3 m of the printer, such as generators, radios and appliances with motors? Either turn off the other electrical appliances, or relocate the printer at least 6 m from other appliances. Does the electrical noise problem still occur?	Go to step 2.	End of work
2	Checking AC ground Is AC power supply outlet wired and grounded appropriately?	Go to step 3.	Request the client to fix AC power supply outlet.
3	Checking HARNESS ASSY AC100V/200V Is the cable connected to HARNESS ASSY AC100V/200V appropriately grounded?	Go to step 4.	Install the ground screw appropriately.
4	Checking after replacing EP CARTRIDGE Replace EP CARTRIDGE. Does the electrical noise problem still occur, after replacement?	Go to step 5.	End of work
5	Checking GUIDE ASSY CRU R (1) Does the Plate Earth of GUIDE ASSY CRU R contact terminals on HVPS/MCU appropriately?	Go to step 6.	Replace GUIDE ASSY CRU R. (RRP8.13)
6	Checking GUIDE ASSY CRU R (2) Remove EP CARTRIDGE. Remove GUIDE ASSY CRU R. (RRP8.13) Is the Plate Earth of GUIDE ASSY CRU R normal and not damaged or soiled, or there is no disturbing object?	Go to step 7.	Clean the plate or replace GUIDE ASSY CRU R. (RRP8.13)
7	Checking HARNESS ASSY ANT for continuity Disconnect P/J15 from HVPS/MCU. Is there continuity between J15 and J150?	Go to step 8.	Replace HARNESS ASSY ANT.

Step	Check	Yes	No
8	Checking PWB ground Remove SHIELD PLATE LVPS (PL12.1.3) and SHIELD PLATE HVPS (PL12.1.8). (RRP12.1, 12.9) Is the ground normal? Are screws for ground of the following PWBs firmly tightened? All screws of HVPS/MCU (PL12.1.19) All screws of LVPS (PL12.1.5) When Option 550 Paper Feeder is installed: Are screws of PWBA FEEDER 550 firmly tightened? When Option Duplex is installed: Are screws of PWBA DUPLEX firmly tightened? When Option OCT is installed: Are screws of PWBA OCT firmly tightened?	Go to step 9.	Restore the inappropriate ground.
9	Checking after replacing FUSER ASSY Warning; Start the operation after the FUSER ASSY has cooled down. Replace FUSER ASSY. (RRP8.8) Does the problem still occur, after replacement?	Go to step 10.	End of work
10	Checking after replacing HVPS/MCU Replace HVPS/MCU. (RRP12.10) Does the problem still occur, after replacement?	Replace all related parts.	End of work

FIP1.43 MOTOR ASSY EXIT

Step	Check	Yes	No
	Possible causes: MOTOR ASSY EXIT (PL10.1.15) HARNESS ASSY LVPS (PL12.1.1) PWBA EXIT MOTOR (PL12.1.4) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking MOTOR ASSY EXIT. Not using DIAG tool: Replace MOTOR ASSY EXIT (RRP10.5) Is the problem cleared?	End of work	Go to step 3.
	Using DIAG tool: Does the MOTOR ASSY EXIT rotate? Check using Chapter 2 Diagnostic: [Exit Motor, Clockwise Test] [Exit Motor, Counterclockwise, High Speed Test] [Exit Motor, Counterclockwise, Low Speed Test]	End of work	Go to step 2.
2	Checking MOTOR ASSY EXIT Replace MOTOR ASSY EXIT. (RRP10.5) Is the problem cleared?	End of work	Go to step 3.
3	Checking HARNESS ASSY LVPS for continuity Disconnect P/J27, P/J10, P/J102 and P/J101 of HARNESS ASSY LVPS. Is there continuity between J27 and J102?	Go to step 4.	Replace HARNESS ASSY LVPS.
4	Checking the power to MOTOR ASSY EXIT Disconnect P/J101 from PWBA EXIT MOTOR. Is the voltage across J101-2(+) and J101-1(-), 24 VDC?	Go to step 5.	Replace LVPS. (RRP12.3)
5	Checking PWBA EXIT MOTOR Replace PWBA EXIT MOTOR. (RRP12.2) Is the problem cleared, after replacement?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP1.44 SENSOR FACE UP OPEN

Step	Check	Yes	No
	Possible causes: SENSOR FACE UP OPEN (PL10.1.25) GATE FU (PL10.2.6) LEVER GATE FU (PL10.2.17) HARNESS ASSY EXIT SNR (PL10.1.27) HVPS/MCU (PL12.1.19)		
1	Checking GATE FU for operation Open COVER ASSY REAR 500. Move LEVER GATE FU up and down. Does GATE FU operate smoothly? Does the actuator go into the sensor detecting point when LEVER GATE FU is moved up, and out of the detecting point when down?	With tool Go to step 2. Without tool Go to step 3.	Replace LEVER GATE FU and GATE FU.
2	Checking SENSOR FACE UP OPEN for operation (1) Remove EP CARTRIDGE. Close COVER ASSY REAR 500. Move LEVER GATE FU up and down. Does the number increase one by one, every time LEVER GATE FU operates? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to step 3.
3	Checking HARNESS ASSY EXIT SNR for continuity Remove 500 EXIT ASSY (PL10.1.2) (RRP10.2) Remove HARNESS ASSY EXIT SNR. Is there continuity between J29-4 and J291-3? J29-5 and J291-2? J29-6 and J291-1?	Go to step 4.	Replace HARNESS ASSY EXIT SNR.
4	Checking SENSOR FACE UP OPEN for operation Replace SENSOR FACE UP OPEN. (RRP10.6) Is the problem cleared?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP1.45 SENSOR FULL STACK

Step	Check	Yes	No
	Possible causes: SENSOR FULL STACK (PL10.1.26) ACTUATOR FULL STACK (PL10.1.10) HARNESS ASSY EXIT SNR (PL10.1.27) HVPS/MCU (PL12.1.19)		
1	Checking ACTUATOR FULL STACK Open COVER ASSY REAR 500. Move ACTUATOR FULL STACK with a finger. Does ACTUATOR FULL STACK operate smoothly? Does the flag go into the sensor detecting point when there is low paper, and out of the detecting point when full?	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR FULL STACK.
2	Checking SENSOR FULL STACK (1) Remove EP CARTRIDGE. Close COVER ASSY REAR 500. Move ACTUATOR FULL STACK up and down. Does the number increase one by one, every time ACTUATOR FULL STACK operates? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to step 3.
3	Checking HARNESS ASSY EXIT SNR for continuity Remove 500 EXIT ASSY (PL10.1.2) (RRP10.2) Remove HARNESS ASSY EXIT SNR. Is there continuity between J29-1 and J290-3? J29-2 and J290-2? J29-3 and J290-1?	Go to step 4.	Replace HARNESS ASSY EXIT SNR.
4	Checking SENSOR FULL STACK (2) Replace SENSOR FULL STACK. (RRP10.7) Is the problem cleared?	End of work	Replace HVPS/MCU. (RRP12.10)

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Duplex Option

4.3 Error/Status Code List

Status Code	Error Contents	Error Description	FIP to be referred
STATUS 3-1	JS0	STATUS 3-1 to 3-5 indicates JAM by combination of Table 1-1.	
STATUS 3-2	JS1		
STATUS 3-3	JS2		
STATUS 3-4	JS3		
STATUS 3-5	JS4		
STATUS 17-3	Duplex Cover Open	-Cover of Option Duplex is open.	FIP2.1
STATUS 17-6	Duplex Unit Fail	- Option Duplex removed after powering on.	FIP2.2 FIP2.7
STATUS 21-1	Illegal Size (Duplex/ OCT)	- Paper size that is not supported in Duplex or OCT mode is selected.	FIP2.6 FIP3.5

4.4 Table 1

JS4	JS3	JS2	JS1	JS0	Contents of Jam	Error Description	FIP to be referred
0	0	1	0	0	Duplex Jam 1	Paper Jam/Dup to Regi -When the paper reached Regi position from Duplex Sensor earlier than the specified time.	FIP2.4
0	1	1	0	0	Duplex Jam 2	Paper Jam/Exit to Dup -When the paper did not reach Duplex Sensor within the specified time.	FIP2.3
1	0	1	0	0	Duplex Jam 3	Paper Jam/Dup to Regi -When the paper was not fed to Duplex Sensor within the specified time. - When Duplex Sensor turned ON in warming up.	FIP2.4
1	1	1	0	0	Duplex Jam 4 (Misfeed Jam)	Paper Jam/Misfeed -When the paper did not reach Regi position from Duplex Sensor within the specified time.	FIP2.5

4.5 Level 1 FIP

FIP2.1 Option Duplex Cover Error

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) HSG LOWER DUP (PL21.1.6) COVER HSG DUP (PL21.1.18) SWITCH DUPLEX (PL21.1.27) PWBA DUPLEX (PL21.1.32)		
1	Checking COVER HSG DUP Open COVER HSG DUP. Is the rib on HSG LOWER DUP to push down SWITCH DUPLEX damaged?	Replace HSG LOWER DUP. (RRP21.3)	With tool Go to step 2. Without tool Go to FIP2.11 SWITCH DUPLEX.
2	Checking SWITCH DUPLEX for function Remove EP CARTRIDGE. Does number of Sensor/Switch Check increase by one, every time COVER HSG DUP is opened and closed? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/ MCU. (RRP12.10)	Go to FIP2.11 SWITCH DUPLEX.

FIP2.2 Option Duplex Error

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) PWBA DUPLEX (PL21.1.32) HARNESS ASSY DUP (PL21.1.7)		
1	Checking Option Duplex installation Does Error still occur, after removing Option Duplex once, reinstalling, and then turning the power ON?	Go to FIP2.8 PWBA DUPLEX.	End of work

FIP2.3 Paper Jam/Exit to Dup

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) SENSOR DUP (PL21.1.34) ACTUATOR DUP (PL21.1.37) ROLL DUP (PL21.1.17) ROLL PINCH (PL21.1.4) MOTOR DUPLEX (PL21.1.29)		
1	Does Error occur, when the power is turned ON?	Go to step 2.	Go to step 4.
2	Checking the paper at ACTUATOR DUP Open COVER HSG DUP. Does the paper remain at ACTUATOR DUP?	Remove the paper, and go to step 3.	Go to FIP2.10 SENSOR DUP.
3	Does Error occur, when the power is turned ON?	Go to FIP2.10 SENSOR DUP.	Go to step 4.
4	Checking Option Duplex installation Remove Option Duplex, and then reinstall. Does Error occur, when running a test print by Duplex printing?	Go to step 5.	End of work
5	Checking paper position (1) Open COVER HSG DUP. Does the front end of paper reach the top roller of ROLL DUP?	Go to step 6.	Replace FUSER ASSY. (RRP8.8)
6	Checking transmission of driving force Remove COVER LEFT (PL21.1.25). Do ROLL DUP and every Gear rotate smoothly? Turn the gear with a finger to check.	Go to step 7.	Replace the disturbing part of rotation.
7	Checking ROLL DUP and ROLL PINCH Open COVER HSG DUP and insert paper, and then close it. Is the paper transferred smoothly? Turn the upper GEAR ROLL (PL21.1.20) clockwise with a finger, and check paper transfer.	Go to step 8.	Replace the disturbing roll of transfer.
8	Checking MOTOR DUPLEX Does MOTOR DUPLEX rotate normally? Check using Chapter 2 Diagnostic [Duplex Motor, Clockwise Normal Speed Test].	Replace HVPS/MCU. (RRP12.10)	Go to FIP2.9 MOTOR DUPLEX.

FIP2.4 Paper Jam/Dup to Regi

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) FDR1 AS SUB 150 A4 (PL5.1.2) SENSOR DUP (PL21.1.34) ACTUATOR DUP (PL21.1.37) ROLL DUP (PL21.1.17) ROLL PINCH (PL21.1.4) MOTOR DUPLEX (PL21.1.29)		
1	Checking Option Duplex installation Remove Option Duplex, and then reinstall. Does Error still occur, when a test print is run by Duplex print?	Go to step 2.	End of work
2	Checking FDR1 AS SUB 150 A4 Is FDR1 AS SUB 150 A4 installed correctly?	Go to step 3.	Reinstall FDR1 AS SUB 150 A4 correctly.
3	Checking transmission of driving force Remove COVER LEFT (PL21.1.25). Do ROLL DUP and every Gear rotate smoothly? Turn the gear with a finger to check.	Go to step 4.	Replace the parts disturbing rotation.
4	Checking ROLL DUP and ROLL PINCH Open COVER HSG DUP and insert paper, and then close it. Do ROLL DUP and every Gear rotate smoothly? Turn the upper GEAR ROLL (PL21.1.20) clockwise with a finger, and check paper transfer.	Go to step 5.	Replace the parts disturbing transfer.
5	Checking MOTOR DUPLEX Does MOTOR DUPLEX rotate normally? Check using Chapter 2 Diagnostic [Duplex Motor, Clockwise Normal Speed Test].	Replace HVPS/MCU. (RRP12.10)	Go to FIP2.9 MOTOR DUPLEX.

FIP2.5 Paper Jam/Duplex Misfeed

Step	Check	Yes	No
	Possible causes: FDR1 AS SUB 150 A4 (PL5.1.2) HVPS/MCU (PL12.1.19) ROLL DUP (PL21.1.17) ROLL PINCH (PL21.1.4) MOTOR DUPLEX (PL21.1.29)		
1	Checking Option Duplex installation Remove Option Duplex, and then reinstall. Does Error occur, when Test Printing a Duplex print?	Go to step 2.	End of work
2	Checking FDR1 AS SUB 150 A4 Is FDR1 AS SUB 150 A4 installed correctly?	Go to step 3.	Reinstall FDR1 AS SUB 150 A4 correctly.
3	Checking transmission of driving force Remove COVER LEFT (PL21.1.25). Do ROLL DUP and every Gear rotate smoothly? Turn the gear with a finger to check.	Go to step 4.	Replace the parts disturbing rotation.
4	Checking ROLL DUP and ROLL PINCH Open COVER HSG DUP and insert paper, and then close it. Is the paper transferred smoothly? Turn the upper GEAR ROLL (PL21.1.20) clockwise with a finger to check paper transfer.	Go to step 5.	Replace the parts disturbing transfer.
5	Checking MOTOR DUPLEX Does MOTOR DUPLEX rotate normally? Check using Chapter 2 Diagnostic [Duplex Motor, Clockwise Normal Speed Test].	Replace HVPS/MCU. (RRP12.10)	Go to FIP2.9 MOTOR DUPLEX.

FIP2.6 Paper Size Error/Duplex

Step	Check	Yes	No
1	Possible causes: HVPS/MCU (PL12.1.19) GUIDE TRAY LEFT (PL7.1.7) PWBA FEEDER 550 (PL20.1.34) Checking paper size Is the paper size capable for duplex printing?	Go to step 2.	Replace the paper.
2	Checking the paper size setup Does the paper size in use match the size set by GUIDE ASSY END?	Go to step 3.	Change the paper size setup.
3	Checking NVRAM data Does NV01 setup match the specification of printer?	Go to step 4.	Modify the memory data of NV01.
4	Checking the paper tray (1) Is it Tray 1 that is in use, when Error occurred?	Replace HVPS/ MCU. (RRP12.10)	Go to step 5.
5	Checking the paper tray (2) Is it Tray 2 that is in use, when Error occurred?	Replace HVPS/ MCU. (RRP12.10)	Go to step 6.
6	Checking the paper tray (3) Is it Tray 3 that is in use, when Error occurred?	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Go to step 7.
7	Checking the paper tray (4) Is it Tray 4 that is in use, when Error occurred?	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Replace HVPS/ MCU. (RRP12.10)

FIP2.7 No Recognition of Option Duplex

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) HARNESS ASSY LVPS (PL12.1.1) PWBA DUPLEX (PL21.1.32) HARNESS ASSY DUP (PL21.1.7)		
1	Checking Option Duplex detection signal (1) Remove PWBA DUPLEX. (RRP21.5) Remove HARNESS ASSY DUP. Connect J2750 of HARNESS ASSY DUP to P2750 of HARNESS ASSY LVPS. Is the voltage across P2750-5(+) and J2750-6(-), 3.3VDC?	Go to step 4.	Go to step 2.
2	Checking Option Duplex detection signal (2) Is the voltage across P/J27-4(+) and P/J27-3(-) on HVPS/MCU, 3.3 VDC?	Go to step 3.	Replace HVPS/ MCU. (RRP12.10)
3	Checking HARNESS ASSY LVPS for continuity Remove HARNESS ASSY LVPS. Is there continuity between each of the following? J27-4 and J2750-5 J27-3 and J2750-6 J27-2 and J2750-7 J27-1 and J2750-8	Go to step 4.	Replace HAR-NESS ASSY LVPS.
4	Checking HARNESS ASSY DUP for continuity Disconnect connectors of HARNESS ASSY DUP. Is there continuity between each of the following? J2750-3 and J50-8 J2750-4 and J50-7 J2750-5 and J50-6 J2750-6 and J50-5	Replace PWBA DUPLEX. (RRP21.5)	Replace HAR-NESS ASSY DUP.

4.6 Level 2 FIP

FIP2.8 PWBA DUPLEX

Step	Check	Yes	No
	Possible causes: PWBA DUPLEX (PL21.1.32) HARNESS ASSY DUP (PL21.1.7) HVPS/MCU (PL12.1.19) HARNESS ASSY LVPS (PL12.1.1)		
1	Checking HARNESS ASSY DUP for continuity Remove Option Duplex. Disconnect P/J50 from PWBA DUPLEX. Is there continuity between J2750 and J50?	Go to step 2.	Replace HARNESS ASSY DUP.
2	Checking HARNESS ASSY LVPS for continuity Disconnect P/J27 from HVPS/MCU. Is there continuity between J27 and J2750?	Go to step 3.	Replace HARNESS ASSY LVPS.
3	Checking after replacing PWBA DUPLEX Replace PWBA DUPLEX. (RRP21.5) Is the problem cleared, after replacement?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP2.9 MOTOR DUPLEX

Step	Check	Yes	No
	Possible causes: MOTOR DUPLEX (PL21.1.29) PWBA DUPLEX (PL21.1.32) HARNESS ASSY DUP (PL21.1.7) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) HARNESS ASSY LVPS (PL12.1.1)		
1	Checking HARNESS ASSY DUP for continuity Remove Option Duplex. Disconnect P/J50 from PWBA DUPLEX. Does each cable between J2750 and J50 have continuity?	Go to step 2.	Replace HARNESS ASSY DUP.
2	Checking HARNESS ASSY LVPS for continuity Disconnect P/J27 from HVPS/MCU. Does each cable between J27 and J2750 have continuity?	With tool Go to step 3. Without tool Go to step 4.	Replace HARNESS ASSY LVPS.
3	Checking MOTOR DUPLEX for rotation Does the motor rotate? Check by the rotating sound of the motor. Check using Chapter 2 Diagnostic [Duplex Motor, Clockwise Normal Speed Test].	Replace HVPS/MCU. (RRP12.10)	Go to step 4.
4	Checking after replacing MOTOR DUPLEX Replace MOTOR DUPLEX. Is the problem cleared after replacing the MOTOR DUPLEX?	End of work	Go to step 5.
5	Checking the power to MOTOR DUPLEX Is the voltage across P/J27-8(+) and P/J27-7(-) on HVPS/MCU, 24 VDC?	Go to FIP2.8 PWBA DUPLEX.	Go to step 6.
6	Checking HVPS/MCU for continuity Disconnect P/J10 and P/J27 from HVPS/MCU. Is there continuity between P10-1 and P27-8?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)

FIP2.10 SENSOR DUP

Step	Check	Yes	No
	Possible causes: SENSOR DUP (PL21.1.34) ACTUATOR DUP (PL21.1.37) HARNESS ASSY DUP SNR (PL21.1.35) PWBA DUPLEX (PL21.1.32) HARNESS ASSY DUP (PL21.1.7) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) HARNESS ASSY LVPS (PL12.1.1)		
1	Checking ACTUATOR DUP for operation Does ACTUATOR DUP operate smoothly? Does the flag go into the sensor detecting area when there is no paper in the Option Duplex, and out of the detecting area when the paper is set?	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR DUP.
2	Checking SENSOR DUP (1) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Open COVER HSG DUP (PL21.1.18) and keep open. Does the number increase one by one, every time ACTUATOR DUP operates? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to step 4.
3	Checking SENSOR DUP (2) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Open COVER HSG DUP (PL21.1.18) and keep open. Is the voltage across P/J53-3(+) and P/J53-2(-), 0 VDC when ACTUATOR DUP is pushed, and 3.3 VDC when released?	Replace HVPS/MCU. (RRP12.10)	Go to step 4.
4	Checking SENSOR DUP (3) Replace SENSOR DUP. (RRP21.7) Does the problem still occur after replacement.	Go to step 5.	End of work
5	Checking HARNESS ASSY DUP SNR for continuity Remove SENSOR DUP. Disconnect P/J53 from PWBA DUPLEX. Does each cable between J53 and J530 have continuity?	Go to step 6.	Replace HARNESS ASSY DUP SNR.
6	Checking HARNESS ASSY DUP for continuity Remove HARNESS ASSY DUP. Is there continuity between J50 and J2750?	Go to step 7.	Replace HARNESS ASSY DUP.
7	Checking HARNESS ASSY LVPS for continuity Remove HARNESS ASSY LVPS. Is there continuity between J27 and J2750?	Go to step 8.	Replace HARNESS ASSY LVPS.
8	Checking HVPS/MCU for continuity Disconnect P/J11 from HVPS/MCU. Is there continuity between P11-16 and P27-4?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)

FIP2.11 SWITCH DUPLEX

Step	Check	Yes	No
	Possible causes: SWITCH DUPLEX (PL21.1.27) HARNESS ASSY LVPS (PL12.1.1) HARNESS ASSY DUP COVER (PL21.1.31) PWBA DUPLEX (PL21.1.32) HARNESS ASSY DUP (PL21.1.7) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking SWITCH DUPLEX for continuity Remove SWITCH DUPLEX. Is J520-2 and J520-1 continuous, when SWITCH DUPLEX is pushed, and cut when released?	Go to step 2.	Replace SWITCH DUPLEX. (RRP21.12)
2	Checking HARNESS ASSY DUP COVER for continuity Remove HARNESS ASSY DUP COVER. Is there continuity between J52 and J520?	Go to step 3.	Replace HARNESS ASSY DUP COVER.
3	Checking HARNESS ASSY DUP for continuity Remove HARNESS ASSY DUP. Is there continuity between J50 and J2750?	Go to step 4.	Replace HARNESS ASSY DUP.
4	Checking HARNESS ASSY LVPS for continuity Remove HARNESS ASSY LVPS. Is there continuity between J27 and J2750?	Go to step 5.	Replace HARNESS ASSY LVPS.
5	Checking the voltage of SWITCH DUPLEX Remove EP Cartridge. Is the voltage across P/J27-4(+) and P/J27-3(-) on HVPS/MCU, 3.3 VDC?	Go to FIP2.8 PWBA DUPLEX.	Go to step 6.
6	Checking HVPS/MCU for continuity Disconnect P/J27 from HVPS/MCU. Is there continuity between P27-4 and P11-16?	Replace HVPS/MCU. (RRP12.10)	Go to FIP1.24 LVPS.

OCT Option

4.7 Error/Status Code List

Status Code	Error Contents	Error Description	FIP to be referred
STATUS 3-1	JS0	STATUS 3-1 to 3-5 indicates JAM by combination of Table 1-1.	
STATUS 3-2	JS1		
STATUS 3-3	JS2		
STATUS 3-4	JS3		
STATUS 3-5	JS4		
STATUS 16-5	Full Stack (OCT)	-Option OCT became Full Stack.	FIP3.6
STATUS 17-2	OCT Cover Open	- Cover of Option OCT is open.	FIP3.1
STATUS 17-5	OCT Unit Fail	- Option OCT is not installed when OCT mode is selected.	FIP3.2 FIP3.7
STATUS 21-1	Illegal Size (Duplex/OCT)	- Paper size that is not supported in Duplex or OCT mode is selected.	FIP2.6 FIP3.5

Table 1-1

JS4	JS3	JS2	JS1	JS0	Contents of Jam	Error Description	FIP to be referred
0	1	1	0	1	OCT Jam 1	Paper Jam/Exit to OCT - When the paper did not reach to OCT Sensor from Exit Sensor within the specified time.	FIP3.3
1	0	1	0	1	OCT Jam 2	Paper Jam/OCT -When the paper was not fed to OCT Sensor within the specified time. - When OCT Sensor turned ON in warming up.	FIP3.4

4.8 Level 1 FIP

FIP3.1 Option OCT Cover Error

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) PWBA OCT (PL23.1.22) COVER REAR (PL23.1.4) COVER OCT (PL23.1.1) S/W REAR COVER (PL23.1.18) HARNESS ASSY REAR COVER (PL23.1.29)		
1	Checking COVER REAR Is the rib on COVER REAR to push down S/W REAR COVER damaged?	Replace Cover REAR. (RRP23.2)	With tool Go to step 2. Without tool, Go to FIP3.1 S/W REAR COVER.
2	Checking S/W REAR COVER for function Remove EP CARTRIDGE. Does the number of Sensor/Switch Check increase by one, every time COVER REAR is opened and closed? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/ MCU. (RRP12.10)	Go to FIP3.1 S/W REAR COVER.

FIP3.2 Option OCT Error

Step	Check	Yes	No
	Possible causes: HARNESS ASSY OCT1 (PL12.1.26) HVPS/MCU (PL12.1.19) PWBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25)		
1	Checking Option OCT installation Remove Option OCT, reinstall and turn the power ON. Does Error still occur?	Go to FIP3.8 PWBA OCT.	End of work

FIP3.3 Paper Jam/Exit to OCT

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) SENSOR OCT (PL23.1.30) ACTUATOR OCT (PL23.1.31) ROLL OCT LOWER (PL23.1.16) ROLL OCT UPPER (PL23.1.36) ROLL PINCH (PL23.1.34) MOTOR ASSY OCT (PL23.1.6)		
1	Does Error occur, when the power is turned ON?	Go to step 2.	Go to step 4.
2	Checking the paper at ACTUATOR OCT Open COVER REAR. Does the paper remain at ACTUATOR OCT?	Remove the paper, and then go to step 3.	Go to FIP3.13 SENSOR OCT.
3	Does Error occur, when the power is turned ON?	Go to FIP3.13 SENSOR OCT.	Go to step 4.
4	Run a test print. Remove Option OCT, and then reinstall it. Does Error still occur, when Test Printing is run in OCT mode?	Go to step 5.	End of work
5	Checking transmission of driving force Do ROLL OCT LOWER, ROLL OCT UPPER and every GEAR rotate smoothly? Remove COVER OCT (RRP23.4), and turn ROLL OCT LOWER, ROLL OCT UPPER and every GEAR with a finger to check.	Go to step 6.	Replace the parts disturbing rotation.
6	Checking paper transfer at ROLL OCT LOWER and ROLL PINCH Insert paper between ROLL OCT LOWER and ROLL PINCH from lower portion of Option OCT. Is the paper transferred smoothly, when turning GEAR 19/ 37 (PL23.1.8) counterclockwise with a finger?	Go to step 7.	Replace the roll disturbing transfer.
7	Checking MOTOR ASSY OCT Does MOTOR ASSY OCT rotate normally? Check using Chapter 2 Diagnostic [OCT Motor Test].	Replace HVPS/ MCU. (RRP12.10)	Go to FIP3.9 MOTOR ASSY OCT.

FIP3.4 Paper Jam/OCT

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) SENSOR OCT (PL23.1.30) ACTUATOR OCT (PL23.1.31) ROLL OCT LOWER (PL23.1.16) ROLL OCT UPPER (PL23.1.36) ROLL PINCH (PL23.1.34) MOTOR ASSY OCT (PL23.1.6)		
1	Does Error occur, when the power is turned ON?	Go to step 2.	Go to step 5.
2	Checking the paper at ACTUATOR OCT Open COVER REAR. Does the paper remain at ACTUATOR OCT?	Remove the paper, and then go to step 3.	Go to FIP3.13 SENSOR OCT.
3	Checking ACTUATOR OCT for operation Does ACTUATOR OCT move smoothly, when you move it?	Go to step 4.	Replace ACTUATOR OCT.
4	Does Error occur, when the power is turned ON?	Go to FIP3.13 SENSOR OCT.	Go to step 5.
5	Run a test print. Remove Option OCT, and then reinstall it. Does Error still occur, when Test Printing is run in OCT mode?	Go to step 6.	End of work
6	Checking transmission of driving force Do ROLL OCT LOWER, ROLL OCT UPPER and every GEAR rotate smoothly? Remove COVER OCT (RRP23.4), and turn ROLL OCT LOWER, ROLL OCT UPPER and every GEAR with a finger to check.	Go to step 7.	Replace the parts disturbing rotation.
7	Checking paper transfer at ROLL OCT LOWER and ROLL PINCH Insert paper between ROLL OCT LOWER and ROLL PINCH from lower portion of Option OCT. Is the paper transferred smoothly, when turning GEAR 19/ 37 (PL23.1.8) counterclockwise with a finger?	Go to step 8.	Replace the roll disturbing transfer.
8	Checking MOTOR ASSY OCT Does MOTOR ASSY OCT rotate normally? Check using Chapter 2 Diagnostic [OCT Motor Test].	Replace HVPS/MCU. (RRP12.10)	Go to FIP3.9 MOTOR ASSY OCT.

FIP3.5 Paper Size Error/OCT

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) GUIDE TRAY LEFT (PL7.1.7) PWBA FEEDER 550 (PL20.1.34)		
1	Checking the paper size setup Does the size of paper in use match the size set by GUIDE ASSY END?	Go to step 2.	Change the paper size setting.
2	Checking NVRAM data Does NV01 configuration 2 meet specifications?	Go to step 3.	Modify the memory data.
3	Checking the paper tray (1) Is the paper supplied from Tray 1, when Error occurred?	Replace HVPS/ MCU. (RRP12.10)	Go to step 4.
4	Checking the paper tray (2) Is the paper supplied from Tray 2, when Error occurred?	Replace HVPS/ MCU. (RRP12.10)	Go to step 5.
5	Checking the paper tray (3) Is the paper supplied from Tray 3, when Error occurred?	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Go to step 6.
6	Checking the paper tray (4) Is the paper supplied from Tray 4, when Error occurred?	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Replace HVPS/ MCU. (RRP12.10)

FIP3.6 Full Stack Error/OCT

Step	Check	Yes	No
	Possible causes: Sensor Full Stack (0n PWBA OCT) HVPS/MCU (PL12.1.19) PWBA OCT (PL23.1.22) ACTUATOR FULL STACK (PL23.1.15)		
1	Checking ACTUATOR FULL STACK for operation Does ACTUATOR FULL STACK move smoothly, when you move ACTUATOR FULL STACK at the paper outlet?	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR FULL STACK.
2	Checking Sensor Full Stack for operation Remove EP CARTRIDGE. Does the number of Sensor/Switch Check increase by one, when you push and release ACTUATOR FULL STACK at the paper outlet? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Go to step 3.	Go to FIP3.8 PWBA OCT.
3	Checking PWBA OCT Replace PWBA OCT. Does Error still occur, after installing a new PWBA OCT?	Replace HVPS/MCU. (RRP12.10)	End of work

FIP3.7 No Recognition of Option OCT

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) HARNESS ASSY OCT1 (PL12.1.26) PWBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25)		
1	Checking Option OCT detection signal (1) Disconnect P/J70 on PWBA OCT. Is the voltage across J70-5(+) and J70-6(-) of HARNESS ASSY OCT2, 3.3 VDC?	Go to step 5.	Go to step 2.
2	Checking Option OCT detection signal (2) Is the voltage across P/J30-4(+) and P/J30-3(-) on HVPS/MCU, 3.3 VDC?	Go to step 3.	Replace HVPS/MCU. (RRP12.10)
3	Checking HARNESS ASSY OCT2 for continuity Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 4.	Replace HARNESS ASSY OCT2.
4	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 5.	Replace HARNESS ASSY OCT1.
5	Checking PWBA OCT Replace PWBA OCT. Does the problem still occur, after replacing PWBA OCT with a new PWBA OCT.	Replace HVPS/MCU. (RRP12.10)	End of work

4.9 Level 2 FIP

FIP3.8 PWBA OCT

Step	Check	Yes	No
	Possible causes: PWBA OCT (PL23.1.22) HARNESS ASSY OCT1 (PL12.1.26) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5)		
1	Checking HARNESS ASSY OCT2 for continuity Remove Option OCT. (RRP23.1) Disconnect P/J70 from PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 2.	Replace HARNESS ASSY OCT2.
2	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 3.	Replace HARNESS ASSY OCT1.
3	Checking PWBA OCT Replace PWBA OCT. (RRP23.7) Does the problem still occur after replacement?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP3.9 MOTOR ASSY OCT

Step	Check	Yes	No
	Possible causes: MOTOR ASSY OCT (PL23.1.6) PWBA OCT (PL23.1.22) HARNESS ASSY OCT MOT (PL23.1.46) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) HARNESS ASSY OCT1 (PL12.1.26)		
1	Checking HARNESS ASSY OCT MOT for continuity Remove HARNESS ASSY OCT MOT. Is there continuity between J71 and J710?	With tool Go to step 2. Without tool Go to step 3.	Replace HARNESS ASSY OCT MOT.
	Checking MOTOR ASSY OCT		
2	Using DIAG tool: Does the MOTOR ASSY OCT rotate? (Check by the rotating sound of the motor.) Check using Chapter 2 Diagnostic [OCT Motor Test].	Go to step 4.	Go to step 3.
	Checking MOTOR ASSY OCT		
3	Not using DIAG tool: Replace MOTOR ASSY OCT. (RRP23.13) Is the problem cleared?	End of work	.Go to step 5.
4	Is the problem cleared?	End of work	Go to FIP3.8 PWBA OCT.
5	Checking HARNESS ASSY OCT2 for continuity Disconnect P/J70 from PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 6.	Replace HARNESS ASSY OCT2.
6	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 7.	Replace HARNESS ASSY OCT1.
7	Checking PWBA OCT Replace PWBA OCT. (RRP23.7) Is the problem cleared?	End of work	Replace HVPS/MCU (RRP12.10)

FIP3.10 MOTOR ASSY OFFSET

Step	Check	Yes	No
	Possible causes: MOTOR ASSY OFFSET (PL23.1.20) MOTOR ASSY OCT (PL23.1.6) PWBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) HARNESS ASSY OCT1 (PL12.1.26)		
1	Checking MOTOR ASSY OFFSET Not using DIAG tool: Replace MOTOR ASSY OFF-SET.(RRP23.8) Is the problem cleared?	End of work	Go to step 4.
	Using DIAG tool: Does the offset of CHUTE OFFSET ASSY operate normally? Check using Chapter 2 Diagnostic [OCT Offset Test].	Go to step 2.	Go to step 3.
2	Is the problem cleared?	End of work	Go to FIP3.8 PWBA OCT.
3	Checking MOTOR ASSY OFFSET Replace MOTOR ASSY OFFSET. (RRP23.8) Is the problem cleared?	End of work	Go to step 4.
4	Checking HARNESS ASSY OCT2 for continuity Disconnect P/J70 from PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 5.	Replace HAR-NESS ASSY OCT2.
5	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 6	Replace HAR-NESS ASSY OCT1.
6	Checking PWBA OCT Replace PWBA OCT. (RRP23.7) Is the problem cleared?	End of work	Replace HVPS/ MCU. (RRP12.10)

FIP3.11 SOLENOID ASSY GATE

Step	Check	Yes	No
	Possible causes: SOLENOID ASSY GATE (PL23.1.27) P WBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) HARNESS ASSY OCT1 (PL12.1.26)		
1	Checking SOLENOID ASSY GATE Not using DIAG tool: Replace SOLENOID ASSY GATE. (RRP23.9) Is the problem cleared?	End of work	Go to step 4.
	Using DIAG tool: Is the feed-switching operation of SOLENOID ASSY GATE correctly? Check using Chapter 2 Diagnostic [Option Direction Test].	Go to step 2.	Go to step 3.
2	Is the problem cleared?	End of work	Go to FIP3.8 PWBA OCT.
3	Checking SOLENOID ASSY GATE Replace SOLENOID ASSY GATE. (RRP23.9) Is the problem cleared?	End of work	Go to step 4.
4	Checking HARNESS ASSY OCT2 for continuity Disconnect P/J70 on PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 5.	Replace HARNESS ASSY OCT2.
5	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 6.	Replace HARNESS ASSY OCT1.
6	Checking PWBA OCT Replace PWBA OCT. (RRP23.7) Is the problem cleared?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP3.12 S/W REAR COVER

Step	Check	Yes	No
	Possible causes: S/W REAR COVER (PL23.1.18) HARNESS ASSY REAR COVER (PL23.1.29) PWBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) HARNESS ASSY OCT1 (PL12.1.26)		
1	Checking S/W REAR COVER for continuity (1) Remove S/W REAR COVER. Is J740-2 and J740-1 continuous, when S/W REAR COVER is pushed, and cut when released?	Go to step 2.	Replace S/W REAR COVER.
2	Checking HARNESS ASSY REAR COVER for continuity Remove HARNESS ASSY REAR COVER. Is there continuity between J74 and J740?	Go to step 3.	Replace S/W REAR COVER.
3	Checking HARNESS ASSY OCT2 for continuity Disconnect P/J70 from PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 4.	Replace HARNESS ASSY OCT2.
4	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 5.	Replace HARNESS ASSY OCT1.
5	Checking S/W REAR COVER (2) Remove EP CARTRIDGE. Is the voltage across P/J30-4(+) and P/J30-3(-) on HVPS/MCU, 3.3 VDC?	Go to FIP3.8 PWBA OCT.	Go to step 6.
6	Checking HVPS/MCU for continuity Disconnect P/J30 from HVPS/MCU. Is there continuity between P30-4 and P11-16?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)

FIP3.13 SENSOR OCT

Step	Check	Yes	No
	Possible causes: SENSOR OCT (PL23.1.30) ACTUATOR OCT (PL23.1.31) HARNESS ASSY OCT SNR (PL23.1.26) PWBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) HARNESS ASSY OCT1 (PL12.1.26)		
1	Checking ACTUATOR OCT for operation Remove Option OCT. (RRP23.1) Open COVER REAR. Move ACTUATOR OCT with a finger. Does ACTUATOR OCT operate smoothly? Does the flag go into the sensor detecting point when there is no paper, and out of the detecting point when the paper is set?	Go to step 2.	Replace ACTUATOR OCT.
2	Checking SENSOR OCT (1) Remove EP CARTRIDGE. Install Option OCT. (RRP23.1) Open COVER REAR. Move ACTUATOR OCT up and down. Does the number increase one by one, every time ACTUATOR OCT operates? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to step 3.
3	Checking HARNESS ASSY OCT SNR for continuity Remove HARNESS ASSY OCT SNR. Is there continuity between P/J73 and P/J730?	Go to step 4.	Replace HARNESS ASSY OCT SNR.
4	Checking HARNESS ASSY OCT2 for continuity Disconnect P/J70 from PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 5.	Replace HARNESS ASSY OCT2.
5	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 6.	Replace HARNESS ASSY OCT1.
6	Checking SENSOR OCT (2) Replace SENSOR OCT. (RRP23.10) Is the problem cleared?	End of work	Go to FIP3.8 PWBA OCT.

FIP3.14 Sensor Full Stack (On PWBA OCT)

Step	Check	Yes	No
	Possible causes: Sensor Full Stack (Mounted on PWBA OCT) ACTUATOR FULL STACK (PL23.1.15) PWBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) HARNESS ASSY OCT1 (PL12.1.26)		
1	Checking ACTUATOR FULL STACK for operation Remove Option OCT. (RRP23.1) Move ACTUATOR FULL STACK with a finger. Does ACTUATOR FULL STACK operate smoothly? Does the flag go into the sensor detecting point when there is no paper, and out of the detecting point when the paper is set?	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR FULL STACK.
2	Checking Sensor Full Stack mounted on PWBA OCT (1) Remove EP CARTRIDGE. Install Option OCT. (RRP23.1) Move ACTUATOR FULL STACK up and down. Does the number increase one by one, every time ACTUATOR FULL STACK operates? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to step 3.
3	Checking HARNESS ASSY OCT2 for continuity Disconnect P/J70 from PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 4.	Replace HARNESS ASSY OCT2.
4	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 5.	Replace HARNESS ASSY OCT1.
5	Checking Sensor Full Stack mounted on PWBA OCT (2) Replace PWBA OCT. (RRP23.7) Is the problem cleared?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP3.15 Sensor Offset (On PWBA OCT)

Step	Check	Yes	No
	Possible causes: Sensor Offset (Mounted on PWBA OCT) CHUTE OFFSET ASSY (PL23.1.35) PWBA OCT (PL23.1.22) HARNESS ASSY OCT2 (PL23.1.25) HVPS/MCU (PL12.1.19) HARNESS ASSY OCT1 (PL12.1.26)		
1	Checking the Actuator of CHUTE OFFSET for operation Remove Option OCT. (RRP23.1) Remove COVER OCT. (RRP23.4) Move the Actuator on CHUTE OFFSET with a finger. Does CHUTE OFFSET operate smoothly?	Go to step 2.	Replace CHUTE OFFSET ASSY.
2	Checking HARNESS ASSY OCT2 for continuity Disconnect P/J70 from PWBA OCT. Remove HARNESS ASSY OCT2. Is there continuity between J70 and J3070?	Go to step 3.	Replace HARNESS ASSY OCT2.
3	Checking HARNESS ASSY OCT1 for continuity Remove HARNESS ASSY OCT1. Is there continuity between J30 and J3070?	Go to step 4.	Replace HARNESS ASSY OCT1.
4	Checking Sensor Full Stack mounted on PWBA OCT (2) Replace PWBA OCT. (RRP23.7) Is the problem cleared?	End of work	Replace HVPS/MCU. (RRP12.10)

550 Paper Feeder Option

4.10 Error/Status Code List

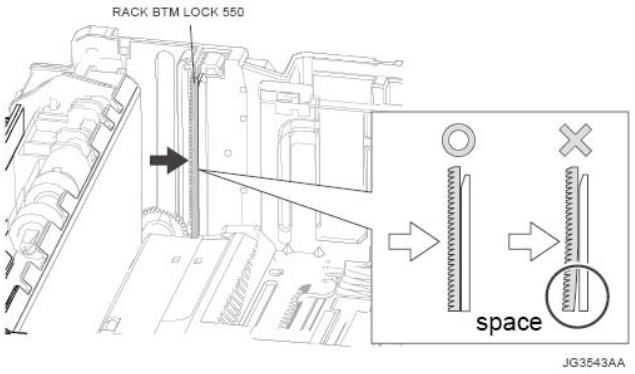
Status Code	Error Contents	Error Description	FIP to be referred
STATUS 1-5	Cassette Fail	- Paper size is not specified.	FIP4.1
STATUS 15-3	Near end of paper in Tray 4	- Remaining paper in Tray 4 became low.	FIP4.3
STATUS 15-4	Near end of paper in Tray 3	- Remaining paper in Tray 3 became low.	FIP4.3
STATUS 16-3	Option Tray Unit Fail	- Option Tray is not installed when Option Tray is selected.	FIP4.4
STATUS 17-4	Inappropriate Opt FDR	- Inappropriate Option Feeder (for example JIGEN) is detected.	FIP4.5
STATUS 21-3	NO Paper in Tray 4	-No paper in Tray 4	FIP4.2
STATUS 21-4	NO Paper in Tray 3	-No paper in Tray 3	FIP4.2

4.11 Level 1 FIP

FIP4.1 No Tray/Tray 3, 4

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) OPT ASSY SIZE (PL20.1.8) Option 550 Paper Feeder 550 PAPER CASSETTE (PL20.3.50)		
1	Does Error still occur, after removing and reinstalling the 550 PAPER CASSETTE of Option 550 Paper Feeder on Tray 3 or Tray 4?	Go to step 2.	End of work
2	Checking 550 PAPER CASSETTE Are GUIDE ASSY END, GEAR SECTOR, RACK SIZE and LINK SW SIZE1/2/3 of 550 PAPER CASSETTE of Tray 3 or Tray 4 installed correctly?	Go to FIP4.10 OPT ASSY SIZE.	Reinstall the parts causing Error.

FIP4.2 No Paper/Tray 3, 4

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) SENSOR NO PAPER (PL20.2.33) ACTUATOR NO PAPER (PL20.2.6) Option 550 Paper Feeder 550 PAPER CASSETTE (PL20.3.50) PLATE ASSY BTM (PL20.3.10) RACK BTM LOCK 550 (PL20.3.21) HOUSING BASE 550(PL20.3.44)		
1	Checking if there is any paper Is there any paper in Tray 3 or Tray 4?	Go to step 2.	Supply paper.
2	Is PLATE ASSY BTM (PL20.3.10) lifted correctly?	Go to step 3.	Remove 550 PAPER CAS-SETTE, and then reinstall it correctly.
3	With pressing down PLATE ASSY BTM, press the center area of RACK BTM LOCK 550 against HOUSING BASE 550. Are RACK BTM LOCK 550 and HOUSING BASE 550 	Go to step 4.	Work over the installation of RACK BTM LOCK 550 again.(RRP20.22)
4	Checking ACTUATOR NO PAPER for operation Remove 550 PAPER CASSETTE. When putting hand from the cassette insertion space of Tray 3 or Tray 4 to move ACTUATOR NO PAPER, does ACTUATOR NO PAPER move smoothly?	Go to step 5.	Replace ACTUATOR NO PAPER.
5	Checking SENSOR NO PAPER for operation Remove EP CARTRIDGE. When putting hand from the cassette insertion space of Tray 3 or Tray 4 to push and release ACTUATOR NO PAPER, does number of Sensor/Switch Check increase by one? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to FIP4.8 SENSOR NO PAPER.

FIP4.3 Low Paper in Tray/Tray 3, 4

Step	Check	Yes	No
	Possible causes: HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) SENSOR LOW PAPER (PL20.1.30) ACTUATOR LOW PAPER (PL20.1.31) PLATE ASSY BTM (PL20.3.10) Option 550 Paper Feeder 550 PAPER CASSETTE (PL20.3.50)		
1	Checking the sensor for operation Does Error still occur, after 550 PAPER CASSETTE filled with a specified amount of paper is inserted into Tray 3 or Tray 4?	Go to step 2.	End of work
2	Checking ACTUATOR LOW PAPER for function Remove 550 PAPER CASSETTE. Does ACTUATOR LOW PAPER move smoothly, when moving ACTUATOR LOW PAPER up and down? Does ACTUATOR LOW PAPER go into the sensor part of SENSOR LOW PAPER, when the flag is pushed up? Does ACTUATOR LOW PAPER go out of the sensor part of SENSOR LOW PAPER, when the flag is released?	Go to step 3.	Replace ACTUATOR LOW PAPER.
3	Checking PLATE ASSY BTM for operation Does PLATE ASSY BTM move ACTUATOR LOW PAPER normally, when PLATE ASSY BTM is pushed or released?	Go to FIP4.9 SENSOR LOW PAPER.	Replace PLATE ASSY BTM. (RRP20.21)

FIP4.4 No Recognition of Option 550 Paper Feeder

The description below is on the assumption that Option 550 Paper Feeder's are installed to Tray 3 and Tray 4.

Step	Check	Yes	No
	Possible causes: LVPS (PL12.1.5) HVPS/MCU (PL12.1.19) PWBA FEEDER 550 (PL20.1.34) HARNESS ASSY FDR2 (PL20.1.5) HARNESS ASSY FDR5 (PL20.1.26)		
1	Checking HARNESS ASSY FDR2 of Feeder equivalent to Tray 3 for continuity Remove Option 550 Paper Feeder. Disconnect P/J2083. Is there continuity between each of the following? J2083-1 and J83-10 J2083-2 and J83-9 J2083-3 and J83-8 J2083-4 and J83-7 J2083-5 and J83-6	Go to FIP4.6, 4.7 PWBA FEEDER 550. Go to step 2, when Tray 4 is not recognized.	Replace HARNESS ASSY FDR2.
2	Checking HARNESS ASSY FDR5 of Feeder equivalent to Tray 3 for continuity Remove Option 550 Paper Feeder. Disconnect P/J84 from PWBA FEEDER 550. Is there continuity between each of the following? J84-1 and J8483-10 J84-2 and J8483-9 J84-3 and J8483-8 J84-4 and J8483-7 J84-5 and J8483-6	Go to step 3.	Replace HARNESS ASSY FDR5.
3	Checking HARNESS ASSY FDR2 of Feeder equivalent to Tray 4 for continuity Remove Option 550 Paper Feeder. Disconnect P/J8483. Is there continuity between each of the following? J8483-1 and J83-10 J8483-2 and J83-9 J8483-3 and J83-8 J8483-4 and J83-7 J8483-5 and J83-6	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Replace HARNESS ASSY FDR2.

FIP4.5 Inappropriate Option 550 Paper Feeder

Step	Check	Yes	No
	Possible causes: PWBA FEEDER 550 (PL20.1.34)		
1	Checking Option 550 Paper Feeder Is Option 550 Paper Feeder for correct JIGEN2 installed?	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Replace Option 550 Paper Feeder for correct JIGEN2.

4.12 Level 2 FIP

FIP4.6 PWBA FEEDER 550

It is stated here as Option 550 Paper Feeder is set as Tray 3. When it is set as Tray 4, refer to the statement in FIP2.21 PWBA FEEDER 550 for the circuit usage condition.

Step	Check	Yes	No
	Possible causes: HARNESS ASSY FDR1 (PL12.1.21) PWBA FEEDER 550 (PL20.1.34) HARNESS ASSY FDR2 (PL20.1.5) HVPS/MCU (PL12.1.19)		
1	Checking HARNESS ASSY FDR2 for continuity Remove HARNESS ASSY FDR2. Is there continuity between J2083 and J83?	Go to step 2.	Replace HARNESS ASSY FDR2.
2	Checking HARNESS ASSY FDR1 for continuity Remove HARNESS ASSY FDR1. Is there continuity through HARNESS ASSY FDR1?	Go to step 3.	Replace HARNESS ASSY FDR1.
3	Checking PWBA FEEDER 550 Replace PWBA FEEDER 550. (RRP20.8) Does the problem still occur, after replacement?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP4.7 PWBA FEEDER 550

It is stated here as Option 550 Paper Feeder is set as Tray 4. When it is set as Tray 3, refer to the statement in FIP2.20 PWBA FEEDER 550 for the circuit usage condition.

Step	Check	Yes	No
	Possible causes: PWBA FEEDER 550 (PL20.1.34) HARNESS ASSY FDR5 (PL20.1.26) HARNESS ASSY FDR2 (PL20.1.5) HVPS/MCU (PL12.1.19)		
1	Checking HARNESS ASSY FDR2 for continuity Remove HARNESS ASSY FDR2. Is there continuity between J2083 and J83?	Go to step 2.	Replace HARNESS ASSY FDR2.
2	Checking HARNESS ASSY FDR5 for continuity Remove HARNESS ASSY FDR5. Is there continuity between J84 and J8483?	Go to step 3.	Replace HARNESS ASSY FDR5.
3	Checking PWBA FEEDER 550 Replace PWBA FEEDER 550. (RRP20.8) Does the problem still occur, after replacement?	End of work	Replace HVPS/MCU. (RRP12.10)

FIP4.8 SENSOR NO PAPER

Step	Check	Yes	No
	Possible causes: SENSOR NO PAPER (PL20.2.33) ACTUATOR NO PAPER (PL20.2.6) HARNESS ASSY CLSNR1 (PL20.2.31) HARNESS ASSY CLSNR2 (PL20.1.36) 550 PAPER CASSETTE (PL20.3.50) Option 550 Paper Feeder PWBA FEEDER 550 (PL20.1.34) HVPS/MCU (PL12.1.19)		
1	Checking ACTUATOR NO PAPER Remove Option 550 Paper Feeder. (RRP20.1) Install 550 PAPER CASSETTE. Move ACTUATOR NO PAPER with a finger. Does ACTUATOR NO PAPER operate smoothly? Does the flag go into the detecting area of the sensor when the paper is set, and out of the detecting area when there is no paper?	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR NO PAPER.
2	Checking SENSOR NO PAPER (1) Install Option 550 Paper Feeder. (RRP20.1) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Remove 550 PAPER CASSETTE. Put the hand in the cassette insertion space, move ACTUATOR NO PAPER. Does the number increase one by one, as ACTUATOR NO PAPER operates? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to step 3.
3	Checking SENSOR NO PAPER (2) Install Option 550 Paper Feeder. (RRP20.1) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Remove 550 PAPER CASSETTE. Put the hand in the cassette insertion space, move ACTUATOR NO PAPER. Is the voltage across P/J85-7(+) and P/J85-6(-), 0 VDC when ACTUATOR NO PAPER is held up, and 3.3 VDC when released?	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Go to step 4.
4	Checking HARNESS ASSY CLSNR1 for continuity Remove HARNESS ASSY LSNR1. Is there continuity between J855-5 and J852-3? J855-6 and J852-2? J855-7 and J852-1?	Go to step 5.	Replace HARNESS ASSY CLSNR1.
5	Checking HARNESS ASSY CLSNR2 for continuity Disconnect connector P/J85 from PWBA FEEDER 550. Is there continuity between J85-5 and J855-3? J85-6 and J855-2? J85-7 and J855-1?	Go to step 6.	Replace HARNESS ASSY CLSNR2.

Step	Check	Yes	No
6	Checking HVPS/MCU for continuity Disconnect P/J11 and P/J20 from HVPS/MCU. Is there continuity between P11-16 and P20-5?	Go to step 7.	Replace HVPS/ MCU. (RRP12.10)
7	Checking after replacing SENSOR NO PAPER (3) Replace SENSOR NO PAPER. (RRP20.16) Does the problem still occur, after replacement?	Replace HVPS/ MCU. (RRP12.10)	End of work

FIP4.9 SENSOR LOW PAPER

Step	Check	Yes	No
	Possible causes: SENSOR LOW PAPER (PL20.1.30) ACTUATOR LOW PAPER (PL20.1.31) HARNESS LOW PAPER (PL20.1.33) HARNESS ASSY FDR2 (PL20.1.5) Option 550 Paper Feeder 550 PAPER CASSETTE PWBA FEEDER 550 (PL20.1.34) PLATE ASSY BTM (PL20.3.10) HVPS/MCU (PL12.1.19)		
1	Checking ACTUATOR LOW PAPER Remove Option 550 Paper Feeder. (RRP20.1) Install 550 PAPER CASSETTE. Move PLATE ASSY BTM up and down. Does ACTUATOR LOW PAPER operate smoothly? Does the flag go into the detecting area of the sensor when PLATE ASSY BTM is up state (ACTUATOR LOW PAPER is pushed up), and out of the detecting area when PLATE ASSY BTM is pressed down?	With tool Go to step 2. Without tool Go to step 3.	Replace ACTUATOR LOW PAPER.
2	Checking SENSOR LOW PAPER (1) Install Option 550 Paper Feeder. (RRP20.1) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Remove 550 PAPER CASSETTE. Put the hand in the cassette insertion space, move ACTUATOR LOW PAPER. Does the number increase one by one, as ACTUATOR LOW PAPER operate? Check using Chapter 2 Diagnostic [Sensor/Switch Check].	Replace HVPS/MCU. (RRP12.10)	Go to step 3.
3	Checking SENSOR LOW PAPER (2) Install Option 550 Paper Feeder. (RRP20.1) Remove EP CARTRIDGE. Close COVER OPEN (PL1.1.2). Remove 550 PAPER CASSETTE. Put the hand in the cassette insertion space, move ACTUATOR LOW PAPER. Is the voltage across P/J81-3(+) and P/J81-2(-), 3.3 VDC when ACTUATOR LOW PAPER is held up, and 0 VDC when released?	Go to FIP4.6, 4.7 PWBA FEEDER 550.	Go to step 4.
4	Checking HARNESS LOW PAPER for continuity Install Option 550 Paper Feeder. (RRP7.1) Disconnect the connector of SENSOR LOW PAPER. Disconnect P/J81 from PWBA FEEDER 550. Is there continuity between J81 and J810?	Go to step 5.	Replace HARNESS LOW PAPER.
5	Checking HVPS/MCU for continuity Disconnect P/J11 and P/J20 from HVPS/MCU. Is there continuity between P11-16 and P20-5?	Go to step 6.	Replace HVPS/MCU. (RRP12.10)
6	Checking SENSOR LOW PAPER (3) Replace SENSOR LOW PAPER. (RRP20. 7) Does the problem still occur, after replacement?	Replace HVPS/MCU. (RRP12.10)	End of work

FIP4.10 OPT ASSY SIZE

Step	Check	Yes	No
	Possible causes: OPT ASSY SIZE (PL20.1.18) HARNESS ASSY SIZE FDR1 (PL20.1.19) HARNESS ASSY SIZE FDR2 (PL20.1.35) Option 550 Paper Feeder 550 PAPER CASSETTE PWBA FEEDER 550 (PL20.1.34) HVPS/MCU (PL12.1.19)		
1	Checking HARNESS ASSY SIZE FDR1 for continuity Remove HARNESS ASSY SIZE FDR1. Is each cable between J801 and J802 continuous?	Go to step 2.	Replace HARNESS ASSY SIZE FDR1.
2	Checking HARNESS ASSY SIZE FDR2 for continuity Disconnect P/J80 from PWBA FEEDER 550. Disconnect P/J801. Is each cable between J80 and J801 continuous?	Go to step 3.	Replace HARNESS ASSY SIZE FDR2.
3	Checking OPT ASSY SIZE Is the harness of OPT ASSY SIZE continuous?	Go to FIP4.7,8 PWBA FEEDER 550.	Replace OPT ASSY SIZE. (RRP20.4)

FIP4.11 CLUTCH ASSY PH

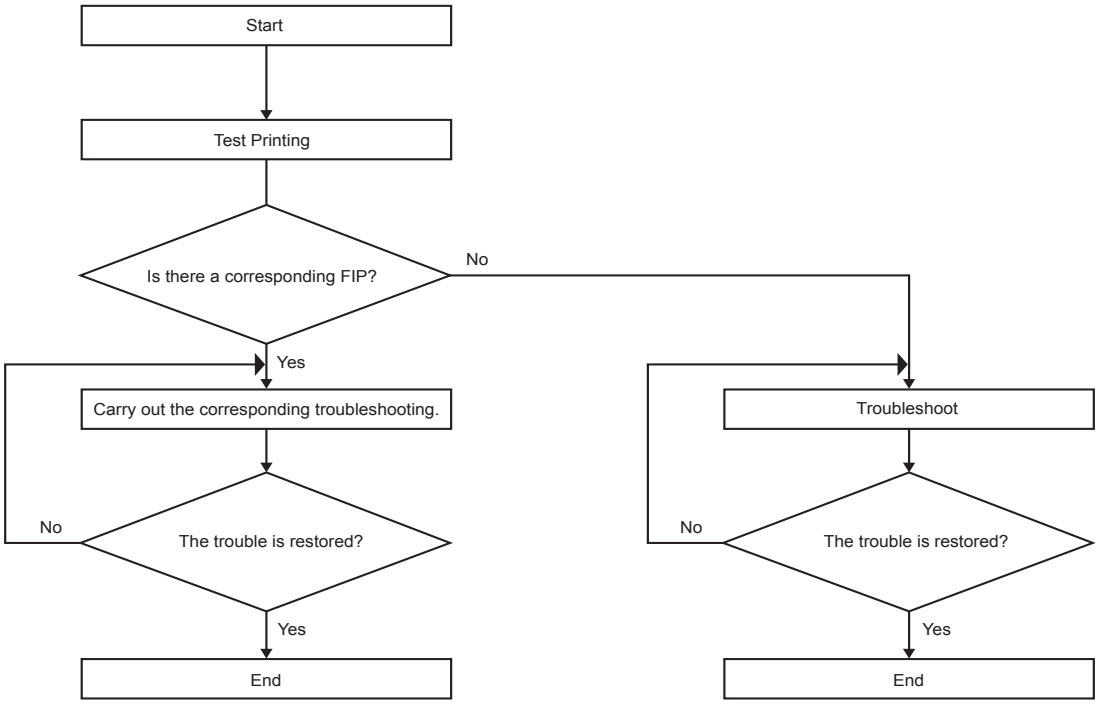
Step	Check	Yes	No
	Possible causes: CLUTCH ASSY PH (PL20.2.21) Option 550 Paper Feeder 550 PAPER CASSETTE (PL20.3.50) PWBA FEEDER 550 (PL20.1.34) HARNESS ASSY CLSNR1 (PL20.2.31) HARNESS ASSY CLSNR2 (PL20.1.36) HARNESS ASSY FDR2 (PL20.1.5) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) HARNESS ASSY FDR1 (PL12.1.21)		
1	Checking HARNESS ASSY CLSNR1 for continuity Disconnect P/J855. Disconnect P/J853. Is each cable between J855 and J853 continuous?	Go to step 2.	Replace HARNESS ASSY CLSNR1.
2	Checking HARNESS ASSY CLSNR2 for continuity Disconnect P/J85 from PWBA FEEDER 550. Disconnect P/J855. Is each cable between J85 and J855 continuous?	Go to step 3.	Replace HARNESS ASSY CLSNR2.
3	Checking the resistance of CLUTCH ASSY PH Is the resistance of the wire wound resistor between P/J853-1 and P/J853-2 of CLUTCH ASSY PH, 172 ohm +/-10% (at 20 °C)?	Go to step 4.	Replace CLUTCH ASSY PH. (RRP20.14)
4	Checking PWBA FEEDER 550 for continuity Disconnect P/J83 from PWBA FEEDER 550. Is there continuity between P83-1 and P85-1?	Go to step 5.	Replace PWBA FEEDER 550. (RRP20.8)
5	Checking HARNESS ASSY FDR2 for continuity Remove HARNESS ASSY FDR2. Is there continuity between J2083 and J83?	Go to step 6.	Replace HARNESS ASSY FDR2.
6	Checking HARNESS ASSY FDR1 for continuity Remove HARNESS ASSY FDR1. Is there continuity between J20 and J2083?	Go to step 7.	Replace HARNESS ASSY FDR1.
7	Checking the power to CLUTCH ASSY PH Remove EP CARTRIDGE. Is the voltage across P20-10(+) and P20-9(-) on HVPS/MCU, 24 VDC?	Replace CLUTCH ASSY PH. (RRP20.14)	Go to step 8.
8	Checking HVPS/MCU for continuity Disconnect P/J10 from HVPS/MCU. Is there continuity between P10-1 and P20-10?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)

FIP4.12 CLUTCH PR-REGI

Step	Check	Yes	No
	Possible causes: CLUTCH PR-REGI (PL20.2.22) Option 550 Paper Feeder 550 PAPER CASSETTE (PL20.3.50) PWBA FEEDER 550 (PL20.1.34) HARNESS ASSY CLSNR1 (PL20.2.31) HARNESS ASSY CLSNR2 (PL20.1.36) HARNESS ASSY FDR2 (PL20.1.5) HVPS/MCU (PL12.1.19) LVPS (PL12.1.5) HARNESS ASSY FDR1 (PL12.1.21)		
1	Checking HARNESS ASSY CLSNR1 for continuity Disconnect P/J855. Disconnect P/J854. Is each cable between J855 and J854 continuous?	Go to step 2.	Replace HARNESS ASSY CLSNR1.
2	Checking HARNESS ASSY CLSNR2 for continuity Disconnect P/J85 from PWBA FEEDER 550. Disconnect P/J855. Is each cable between J85 and J855 continuous?	Go to step 3.	Replace HARNESS ASSY CLSNR2.
3	Checking the resistance of CLUTCH PR-REGI Is the resistance of the wire wound resistor between P/J854-1 and P/J854-2 of CLUTCH PR-REGI, 172 ohm +/-10% (at 20 °C)?	Go to step 4.	Replace CLUTCH PR-REGI. (RRP20.15)
4	Checking PWBA FEEDER 550 for continuity Disconnect P/J83 from PWBA FEEDER 550. Is there continuity between P83-3 and P85-3?	Go to step 5.	Replace PWBA FEEDER 550. (RRP20.8)
5	Checking HARNESS ASSY FDR2 for continuity Remove HARNESS ASSY FDR2. Is there continuity between J2083 and J83?	Go to step 6.	Replace HARNESS ASSY FDR2.
6	Checking HARNESS ASSY FDR1 for continuity Remove HARNESS ASSY FDR1. Is there continuity between J20 and J2083?	Go to step 7.	Replace HARNESS ASSY FDR1.
7	Checking the power to CLUTCH PR-REGI Remove EP CARTRIDGE. Is the voltage across P20-10(+) and P20-9(-) on HVPS/MCU, 24 VDC?	Replace CLUTCH PR-REGI. (RRP20.15)	Go to step 8.
8	Checking HVPS/MCU for continuity Disconnect P/J10 from HVPS/MCU. Is there continuity between P10-1 and P20-10?	Go to FIP1.24 LVPS.	Replace HVPS/MCU. (RRP12.10)

5. Image Quality Defects

5.1 Entry Chart for Image Quality Troubleshooting



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NOTE

It is assumed that the Printer Controller is functioning normally. By running a test print with the engine only, if the trouble is on the Printer Controller side or the engine side, diagnosis is simple, except those defects that are not able to be diagnosed by test print.

- Test print result with the engine only is normal. ---> Malfunction on Printer Controller side

- Test print result with the engine only is also abnormal. ---> Malfunction on the engine side

When it is the case of [Malfunction on Printer Controller side], replace with normal Printer Controller and normal Interface Cable, and check.

When the trouble still occurs after replacement, check the host side, and then operate Troubleshooting efficiently, using the following image quality FIP according to each phenomenon.

When an image quality problem occurs, run a test print to clearly define the defect. Next, troubleshoot using the image quality FIP table accordingly.
If the problem cannot be resolved using the image quality FIP, check again with the image quality FIP. Next, replace [ESS and possible causes] in order and check, and troubleshoot, using [Chapter 2 Diagnostic].

Image quality FIP states regarding the typical image quality trouble, as follows.

- FIP-1.P1 Faint print (Low contrast)
- FIP-1.P2 Blank print (No print)
- FIP-1.P3 Solid black
- FIP-1.P4 Vertical blank lines (White stripes in paper transport direction)
- FIP-1.P5 Horizontal band cross out
- FIP-1.P6 Vertical stripes
- FIP-1.P7 Horizontal stripes
- FIP-1.P8 Partial lack
- FIP-1.P9 Spots
- FIP-1.P10 Afterimage
- FIP-1.P11 Background (Fog)
- FIP-1.P12 Skew
- FIP-1.P13 Paper damage

NOTE

When horizontal lines and/or spot occur periodically, it is possibly caused by the trouble of a particular roll. In this case, measure the trouble interval on the test print, and check the relation to the roll in the table below. The interval does not necessarily match circumference of the roll. The trouble may be solved easily by the check.

Roll	Parts name	PL No.	Roll diameter (mm)	Interval (mm)
Drum	EP CARTRIDGE	-	30.5	94.3
BTR	BTR ASSY	PL8.1	16.2	50.7
Heat Roll	FUSER ASSY	PL8.1	24.9	78.3
Pressure Roll	FUSER ASSY	PL8.1	30	94.2

5.2 Image Quality FIP

FIP- 1.P1 Faint Print

SCO001F

Print defect
The density of the image is entirely too faint.

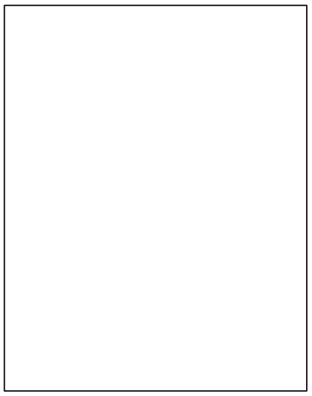
ESS and possible causes
- EP CARTRIDGE
- GUIDE ASSY CRU R (PL8.1.25)
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- PWBA ESS (PL12.1.13)
- ROS ASSY (PL8.1.1)
- FUSER ASSY (PL8.1.20)
- LVPS (PL12.1.5)
- HVPS/MCU (PL12.1.19)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking the paper condition Have new, dry and recommended paper on, and operate Test Print. Is the density of the image normal?	End of work	Go to step 2.
2	Checking the laser beam course Make sure there is no obstacle between ROS ASSY and Drum. Check if any stains on ROS ASSY window. Are there any obstacles on the laser beam course? Is ROS ASSY window clean?	Go to step 3.	Remove obstacles and/or clean ROS ASSY window.
3	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Re-print the problem image. Is the image density normal?	End of work	Go to step 4.
4	Checking BTR ASSY Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 5.	Replace BTR ASSY. (RRP8.10)
5	Checking the drum ground Remove GUIDE ASSY CRU R. (RRP8.13) Check the Plate Earth, located on the back of GUIDE ASSY CRU R. Is the Plate Earth stained and/or deformed?	Go to step 6.	Reform or clean the Plate Earth, or replace GUIDE ASSYCRU R. (RRP8.13)
6	Checking HVPS/MCU Replace HVPS/MCU. (RRP12.10) Carry out a test printing Is the problem cleared?	End of work	Go to step 7.

Step	Check	Yes	No
7	Checking the image development process Operate Test Print, and turn off the power of the printer while printing. Remove the EP CARTRIDGE with care, and check the toner image formed on the drum, right before the transcribe part (BTR). Is the image on the drum completely formed? Is the area clear and black, and easily read?	Go to step 8.	Go to FIP1.41 HVPS/MCU.
8	Checking the image transcribe process Check the toner image formed on the drum, right after the transcribe part (BTR). Is the toner image on the drum completely transcribed on the paper?	Go to step [ESS and possible causes].	Go to FIP1.41 HVPS/MCU.

FIP- 1.P2 Blank print (No print)

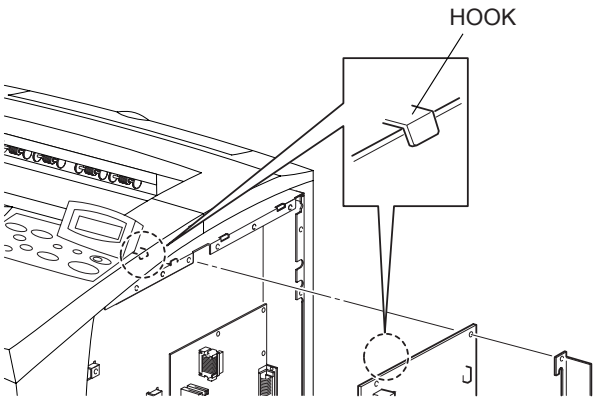


SCO002F

Print defect
The entire paper is printed pure white.

ESS and possible causes
- EP CARTRIDGE
- GUIDE ASSY CRU R (PL8.1.25)
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- ROS ASSY (PL8.1.1)
- PWBA ESS (PL12.1.13)
- FUSER ASSY (PL8.1.20)
- LVPS (PL12.1.5)
- HVPS/MCU (PL12.1.19)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Confirm whether HVPS/MCU is assembled under the hook of FRAME.  JG54A7AB	Go to step 2.	Work over the installation of HVPS/MCU again. (RRP12.10)
2	Checking the laser beam course Make sure there is no obstacle between ROS ASSY and Drum. Are there any obstacles on the laser beam course?	Go to step 3.	Remove obstacles.
3	Checking ROS ASSY Check if any obstacles entirely cover the ROS ASSY window. Check if the connectors of the ROS ASSY are disconnected.	Go to step 4.	Remove obstacles of ROS ASSY window and/or connect the connectors of ROS ASSY.
4	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Re-print the problem image. Is the image density normal?	End of work	Go to step 5.

Step	Check	Yes	No
5	Checking BTR ASSY Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 6.	Replace BTR ASSY. (RRP8.10)
6	Checking the image development process Operate Test Print, and turn off the power of the printer while printing. Remove the EP CARTRIDGE with care, and check the toner image formed on the drum, right before the transcribe part (BTR). Is the image on the drum completely formed? Is the area clear and black, and easily read?	Go to step 7.	Go to FIP1.41 HVPS/MCU.
7	Checking the image transcribe process Check the toner image formed on the drum, right after the transcribe part (BTR). Is the toner image on the drum completely transcribed on the paper?	Go to step [ESS and possible causes].	Go to FIP1.41 HVPS/MCU.

FIP- 1.P3 Solid Black

SCO003F

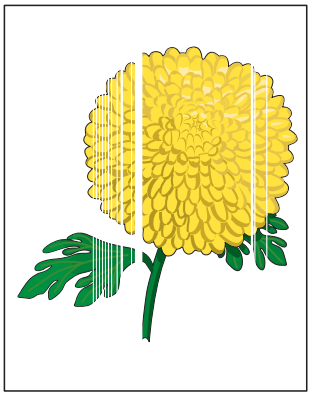
Print defect
The entire paper is printed jet-black.

ESS and possible causes
- EP CARTRIDGE
- HVPS/MCU (PL12.1.19)
- LVPS (PL12.1.5)
- 150 FEEDER ASSY (PL5.1.1)
- ROS ASSY (PL8.1.1)
- PWBA ESS (PL12.1.13)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Carry out a test printing. Is the print normal?	End of work	Go to step 2.
2	Checking HVPS/MCU Cover entire ROS ASSY window. Carry out a test printing. Is the print black?	Go to FIP1.41 HVPS/MCU.	Go to step 3.
3	Checking ROS ASSY Cover a half of ROS ASSY window. Carry out a test printing. Is the print half white and half black? Is the print black?	Go to FIP1.26 ROS ASSY.	Replace HVPS/ MCU. (RRP12.10)

FIP- 1.P4 Vertical blank lines (White stripes in paper transport direction)



SCO004F

Print defect
There are some extremely faint or completely non-printed parts. Those non-printed parts cover a wide area vertically, along the paper feeding direction.

ESS and possible causes
- EP CARTRIDGE
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- ROS ASSY (PL8.1.1)
- PWBA ESS (PL12.1.13)
- FUSER ASSY (PL8.1.20)
- Heat Roll
- Pressure Roll
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on

Step	Check	Yes	No
1	Checking the paper condition Have new, dry and recommended paper on. Re-print the problem image. Does the problem still occur?	Go to step 2.	End of work
2	Checking the paper transfer course Check if there are any stains or obstacles on the paper transfer course between the paper feeding entrance and the exit. Are there any obstacles on the paper transfer course?	Go to step 3.	Remove the obstacles or stains from the paper transfer course.
3	Checking the laser beam course Make sure there is no obstacle between ROS ASSY and Drum. Are there any obstacles on the laser beam course? Check if any stains on ROS ASSY window.	Go to step 4.	Remove all the obstacles from the laser beam course and/or clean ROS ASSY window.
4	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Re-print the problem image. Does the problem still occur?	Go to step 5.	End of work
5	Checking BTR ASSY (PL8.1.21) Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 6.	Replace BTR ASSY. (RRP8.10)

Step	Check	Yes	No
6	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step [ESS and possible causes].	Replace FUSER ASSY. (RRP8.8)

FIP- 1.P5 Horizontal band cross out

SCO005F

Print defect
There are some extremely faint or completely non-printed parts. Those non-printed parts cover a wide area horizontally, perpendicular to the paper feeding direction.

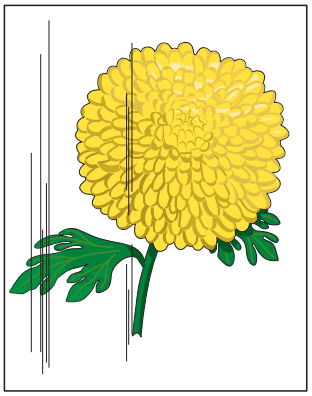
ESS and possible causes
- EP CARTRIDGE
- HVPS/MCU (PL12.1.19)
- GUIDE ASSY CRU R (PL8.1.25)
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- ROS ASSY (PL8.1.1)
- PWBA ESS (PL12.1.13)
- FUSER ASSY (PL8.1.20)
- Heat Roll
- Pressure Roll
- MAIN MOTOR (PL11.1.2)
- GEAR ASSY HOUSING (PL11.1.3)
- CLUTCH REGI (PL5.1.23)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking the paper condition Have new, dry and recommended paper on. Re-print the problem image. Does the problem still occur?	Go to step 2.	End of work
2	Checking EP CARTRIDGE Install new EP CARTRIDGE. Has the horizontal band cross out gone?	End of work	Go to step3.
3	Checking BTR ASSY Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 4.	Replace BTR ASSY. (RRP8.10)
4	Checking ROS ASSY Are the connectors on ROS ASSY surely connected?	Go to step 5.	Reconnect the connectors.
5	Checking the image development process Operate Test Print, and turn off the power of the printer while printing. Remove the EP CARTRIDGE with care, and check the toner image formed on the drum, right before the transcribe part (BTR). Is the image on the drum completely formed? Is the area clear and black, and easily read? Has the horizontal band cross out gone?	Go to step 6.	Go to FIP1.41 HVPS/MCU.

Step	Check	Yes	No
6	Checking the image transcribe process Check the toner image formed on the drum, right after the transcribe part (BTR). Is the toner image on the drum completely transcribed on the paper?	Go to step 7.	Go to FIP1.41 HVPS/MCU.
7	Checking Drive Assy and GEAR ASSY HOUSING Replace Drive Assy and GEAR ASSY HOUSING. (RRP11.3) Re-print the problem image. Does the problem still occur?	Go to step 8.	End of work
8	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step [ESS and possible causes].	Replace FUSER ASSY. (RRP8.8)

FIP- 1.P6 Vertical stripes



SCO006F

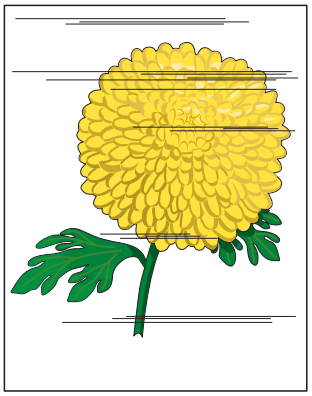
Print defect
There are vertical black stripes along the paper.

ESS and possible causes
- EP CARTRIDGE
- HVPS/MCU (PL12.1.19)
- GUIDE ASSY CRU R (PL8.1.25)
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- ROS ASSY (PL8.1.1)
- PWBA ESS (PL12.1.13)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Check the paper transfer course. Check if there are any stains or obstacles on the paper transfer course between the paper feeding entrance and the exit. Are there any obstacles on the paper transfer course?	Go to step 2.	Remove the obstacles or stains from the paper transfer course.
2	Checking the laser beam course Make sure there is no obstacle between ROS ASSY and Drum. Are there any obstacles on the laser beam course? Check if any stains on ROS ASSY window.	Go to step 3.	Remove all the obstacles from the laser beam course and/or clean ROS ASSY window.
3	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Carry out a test printing. Have the vertical black stripes gone?	End of work	Go to step 4.
4	Checking BTR ASSY Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 5.	Replace BTR ASSY. (RRP8.10)
5	Checking ROS ASSY Are the connectors on ROS ASSY surely connected?	Go to step 6.	Reconnect the connectors.
6	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to FIP1.42 Electrical Noise.	Replace FUSER ASSY. (RRP8.8)

FIP- 1.P7 Horizontal stripes



SCO007F

Print defect
There are horizontal black stripes along the paper.

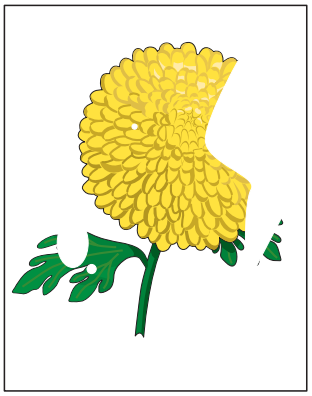
ESS and possible causes
- EP CARTRIDGE
- HVPS/MCU (PL12.1.19)
- GUIDE ASSY CRU R (PL8.1.25)
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- MAIN MOTOR (PL11.1.2)
- GEAR ASSY HOUSING (PL11.1.3)
- ROS ASSY (PL8.1.1)
- PWBA ESS (PL12.1.13)
- LVPS (PL12.1.5)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Re-print the problem image. Have the horizontal black stripes gone?	End of work.	Go to step 2
2	Checking ROS ASSY Are the connectors on ROS ASSY surely connected? Is the ROS ASSY surely secured to the frame?	Go to step 3.	Reconnect the connectors and/or reinstall the ROS ASSY.
3	Checking Drive Assy and GEAR ASSY HOUSING Replace Drive Assy and GEAR ASSY HOUSING. (RRP11.3) Re-print the problem image. Does the problem still occur?	Go to step 4.	End of work
4	Checking GUIDE ASSU CRU R for continuity Remove EP CARTRIDGE. Check if there are any deformation or stains on the plate of GUIDE ASSY CRU R. Check the continuity of the plate of GUIDE ASSY CRU R. Are there any deformation or stains on the plate of GUIDE ASSY CRU R, and does it continuous?	Go to step 5.	Replace GUIDE ASSY CRU R. (RRP8.13)
5	Checking connection of GUIDE ASY CRU R Check the contact of the plate of GUIDE ASSY CRU R with the terminal on HVPS/MCU. Does the plate of GUIDE ASSY CRU R correctly contact with the terminal on HVPS/MCU?	Go to step 6.	Replace GUIDE ASSY CRU R. (RRP8.13)

Step	Check	Yes	No
6	Checking Drum ground Check the Plate Earth of GUIDE ASSY CRU R. Are there any stains or deformation on the Plate Earth?	Go to step 7.	Restore or clean the Plate Earth, or replace GUIDE ASSY CRU R. (RRP8.13)
7	Checking BTR ASSY Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 8.	Replace BTR ASSY. (RRP8.10)
8	Checking the image development process Operate Test Print, and turn off the power of the printer while printing. Remove the EP CARTRIDGE with care, and check the toner image formed on the drum, right before the transcribe part (BTR). Is the image on the drum completely formed? Is the area clear and black, and easily read?	Go to step 9.	Go to FIP1.41 HVPS/MCU.
9	Checking the image transcribe process Check the toner image formed on the drum, right after the transcribe part (BTR). Is the toner image on the drum completely transcribed on the paper?	Go to step 10.	Replace BTR ASSY. (RRP8.10)
10	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step [ESS and possible causes].	Replace FUSER ASSY. (RRP8.8)

FIP- 1.P8 Partial Deletion



SCO008F

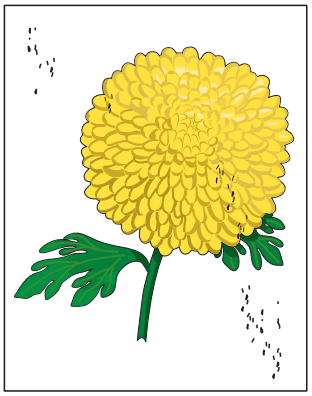
Print defect
There are some extremely faint or completely missing parts. Those missing
parts are dotted in a limited area on the paper.

ESS and possible causes
- EP CARTRIDGE
- HVPS/MCU (PL12.1.19)
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- PWBA ESS (PL12.1.13)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking the paper condition Have new, dry and recommended paper on. Re-print the problem image. Does the problem still occur?	Go to step 2.	End of work
2	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Re-print the problem image. Does the problem still occur?	Go to step 3.	End of work
3	Checking the image development process Operate Test Print, and turn off the power of the printer while printing. Remove the EP CARTRIDGE with care, and check the toner image formed on the drum, right before the transcribe part (BTR). Is the image on the drum completely formed? Is the area clear and black, and easily read?	Go to step 4.	Go to FIP1.41 HVPS/MCU.
4	Checking the image transcribe process Check the toner image formed on the drum, right after the transcribe part (BTR). Is the toner image on the drum completely transcribed on the paper?	Go to step 5.	Replace BTR ASSY. (RRP8.10)
5	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step [ESS and possible causes].	Replace FUSER ASSY. (RRP8.8)

FIP- 1.P9 Spots



SCO009F

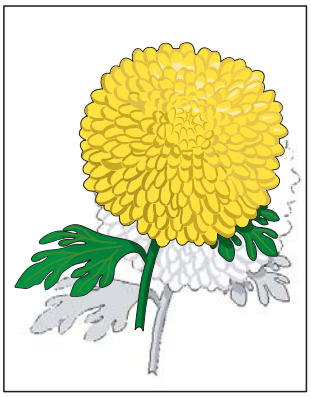
Print defect
There are toner spots all over the paper disorderedly.

ESS and possible causes
- EP CARTRIDGE
- HVPS/MCU (PL12.1.19)
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- ROS ASSY (PL8.1.1)
- GUIDE ASSY CRU R (PL8.1.25)
- PWBA ESS (PL12.1.13)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Carry out a test printing. Have the spots gone?	End of work	Go to step 2.
2	Checking BTR ASSY Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 3.	Replace BTR ASSY. (RRP8.10)
3	Checking ROS ASSY Are the connectors on ROS ASSY surely connected?	Go to step 4.	Reconnect the connectors.
4	Checking the image development process Operate Test Print, and turn off the power of the printer while printing. Remove the EP CARTRIDGE with care, and check the toner image formed on the drum, right before the transcribe part (BTR). Is the image on the drum completely formed? Is the area clear and black, and easily read?	Go to step 5.	Go to FIP1.41 HVPS/MCU.
5	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step [ESS and possible causes].	Replace FUSER ASSY. (RRP8.8)

FIP- 1.P10 Ghosting



SCO010F

Print defect
The ghost appears on the paper. The ghost may be the image of the previous
page, or a part of the page currently printing.

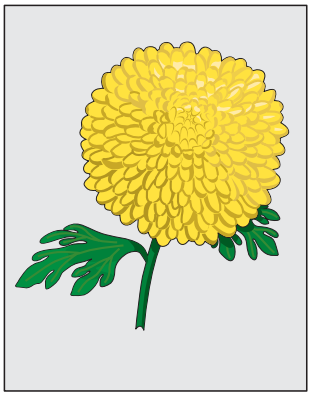
ESS and possible causes
- EP CARTRIDGE
- HVPS/MCU (PL12.1.19)
- GUIDE ASSY CRU R (PL8.1.25)
- Drive Assy
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- MAIN MOTOR (PL11.1.2)
- GEAR ASSY HOUSING (PL11.1.3)
- PWBA ESS (PL12.1.13)
- FUSER ASSY (PL8.1.20)
- Heat Roll
- Pressure Roll
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking repeat printing Check the afterimage. Is the client printing a copy of the same image in a large quantity?	Go to step 2.	Go to step 3.
2	Print 30 pages of the image of every kind. Does the afterimage still appear?	Go to step 3.	Don’t make a copy of the same image in a large quantity.
3	Checking the paper condition Have new, dry and recommended paper on. Re-print the problem image. Does the problem still occur?	Go to step 4.	End of work
4	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Re-print the problem image. Does the problem still occur?	Go to step 5.	End of work
5	Checking BTR ASSY Remove BTR ASSY. (RRP8.10) Check if any stains and/or wear on BTR ASSY. Are there any stains and/or wear on BTR?	Go to step 6.	Replace BTR ASSY. (RRP8.10)

Step	Check	Yes	No
6	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step 7.	Replace FUSER ASSY. (RRP8.8)
7	Checking ground of Heat Roll, Pressure Roll and Inlet Chute Check visually, if there are any stains or transformation on the two plates on the left side of FUSER ASSY. Check the continuity between the plate on the left side of FUSER ASSY and the following points: - Back plate and Both ends of Heat Roll, without coating (5-10 k-ohm) - Front plate and The plate on Inlet Chute left end (1-2 k-ohm) Are the grounding plates of Heat Roll, Pressure Roll and Inlet Chute sound and continuous?	Go to step 8.	Replace FUSER ASSY. (RRP8.8)
8	Checking ground of FUSER ASSY Remove EP CARTRIDGE. Check if there are any stains or deformation on GEAR ASSY HOUSING. Check the continuity between the printer frame and screw on the back of FUSER ASSY. Are there any deformation or stains on GEAR ASSY HOUSING? Is FUSER ASSY grounded?	Go to step [ESS and possible causes].	Replace GEAR ASSY HOUSING. (RRP11.3)

FIP- 1.P11 Background (Fog)



SCO011F

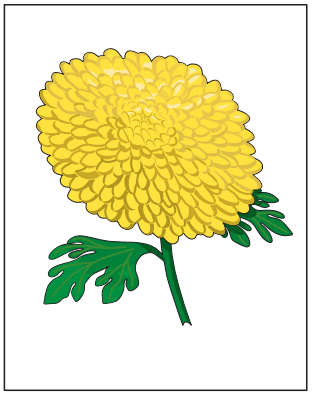
Print defect
There is toner stain all over or a part of the page. The stain appears as very bright gray stain.

ESS and possible causes
- EP CARTRIDGE
- BTR ASSY (PL8.1.21)
- HVPS/MCU (PL12.1.19)
- GUIDE ASSY CRU R (PL8.1.25)
- ROS ASSY (PL8.1.1)
- PWBA ESS (PL12.1.13)
- 150 FEEDER ASSY (PL5.1.1)
- FUSER ASSY (PL8.1.20)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Carry out a test printing. Have the background gone?	End of work	Go to step 2.
2	Checking the image development process Operate Test Print, and turn off the power of the printer while printing. Remove the EP CARTRIDGE with care, and check the toner image formed on the drum, right before the transcribe part (BTR). Is the image on the drum completely formed? Is the area clear and black, and easily read?	Go to step 3.	Go to FIP1.41 HVPS/MCU
3	Checking ROS ASSY Are the connectors on ROS ASSY surely connected?	Go to step 4.	Reconnect the connectors.
4	Checking 150 FEEDER ASSY ground Remove EP CARTRIDGE. Check the continuity from the front open part between 150 FEEDER ASSY metal part and printer frame metal part. Is 150 FEEDER ASSY grounded?	Go to step 5.	Remove 150 FEEDER ASSY and install again for correct ground. (RRP5.1)
5	Checking FUSER ASSY ground Open COVER REAR (PL1.4). Check the continuity between printer frame and the screw on the back of FUSER ASSY. Is FUSER ASSY grounded?	Go to step [ESS and possible causes].	Remove FUSER ASSY and install again. (RRP8.8)

FIP- 1.P12 Skew



SCO012F

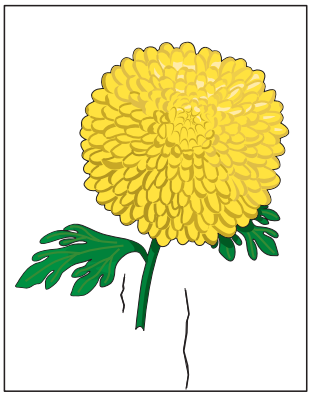
Print defect
The printed image is not paralleled with both sides of the paper.

ESS and possible causes
- EP CARTRIDGE
- BTR ASSY (PL8.1.21)
- 150 FEEDER ASSY (PL5.1.1)
- FUSER ASSY (PL8.1.20)
- Paper Cassette
- PLATE ASSY BTM (PL2.1.10, PL4.1.10)
- 150 Paper Feeder
- Option 550 Paper Feeder
- PWBA ESS (PL12.1.13)
- 550 FEEDER ASSY (PL7.1.10)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking the installation place Check if there is any irregularity on the installation place. Check if there is any missing Foot. Is the setup surface normal?	Go to step 2.	Arrange the installation place normally.
2	Checking the paper feeding Remove the Paper Cassette. Insert the paper to the Paper Cassette correctly. Install the Paper Cassette to the printer. Install PLATE ASSY BTM correctly. (not to incline right or left) (RRP2.5 and 4.5) Re-print the problem image. Does the problem still occur?	Go to step 3.	End of work
3	Check the paper transfer course. Check if there are any stains or obstacles on the paper transfer course between the paper feeding tray and the exit tray. Are there any obstacles on the paper transfer course?	Go to step 4.	Remove the obstacles or stains from the paper transfer course.
4	Checking the rolls on the paper transfer course Check all the rolls on the course, where the paper transfer between paper feeding entrance tray and exit tray, and check if there are any stains, wear or damages. Check if the pinch roll rotates freely, and the spring pressure is even. Are there any stains, wear or damages on the rolls in the paper transfer course?	Go to step 5.	Replace the damaged or worn-out rolls. (Refer to corresponding RRPs, for replacement.)
5	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Re-print the problem image. Is the image still skew?	Go to step [ESS and possible causes].	End of work

FIP- 1.P13 Paper damage


SCO013F

Print defect
The paper comes out from the printer crumpled, folded or worn-out.

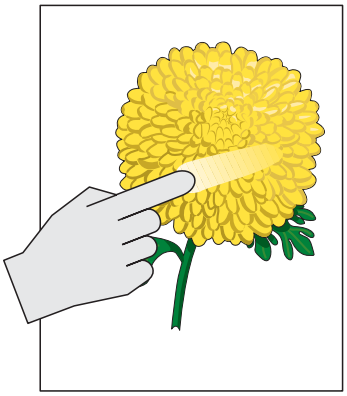
ESS and possible causes
- FUSER ASSY (PL8.1.20)
- Heat Roll
- Pressure Roll
- PWBA ESS (PL12.1.13)
- 150 FEEDER ASSY (PL5.1.1)
- EP CARTRIDGE
- BTR ASSY (PL8.1.21)
- Paper Cassette
- PLATE ASSY BTM (PL2.1.10, PL4.1.10)
- 150 Paper Feeder
- 550 FEEDER ASSY (PL7.1.10)
- Option 550 Paper Feeder

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking the paper feeding Observe the paper feeding condition. Is the paper fed crooked?	Go to FIP-1.P12 Skew.	Go to step 2.
2	Checking the paper condition Have new, dry and recommended paper on. Carry out a test printing. (Refer to Chapter 2 Diagnostic [TEST PATTERN MODE MENU]. Dose the problem still occur?	Go to step 3.	End of work
3	Check the paper transfer course. Check if there are any stains or obstacles on the paper transfer course between the paper feeding tray and the exit tray. Are there any obstacles on the paper transfer course?	Go to step 4.	Remove the obstacles or stains from the paper transfer course.
4	Checking the rolls on the paper transfer course Check all the rolls on the course, where the paper transfer between paper feeding entrance tray and exit tray, and check if there are any stains, wear or damages. Are there any stains, wear or damages on the rolls in the paper transfer course?	Go to step 5.	Replace the damaged or worn-out rolls.
5	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the Gear HR with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step 6.	Replace FUSER ASSY. (RRP8.8)

Step	Check	Yes	No
6	Checking EP CARTRIDGE Install a new EP CARTRIDGE. Carry out a test printing. Is the paper still damaged?	Go to step [ESS and possible causes].	End of work

FIP- 1.P14 Unfused Image

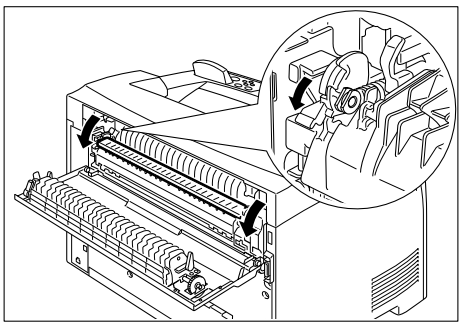


SCO014F

Print defect
The printed image is not fixed on the paper properly. The image easily
comes off when rubbed.

ESS and possible causes
- FUSER ASSY (PL8.1.20)
- Heat Roll
- Pressure Roll
- PWBA ESS (PL12.1.13)
- LVPS (PL12.1.5)

Before commencing troubleshooting, check the paper transfer course. Make sure there is no foreign articles on the transfer course, such as staples, paper clips, scraps of paper and so on.

Step	Check	Yes	No
1	Checking FUSER ASSY installation Check that the levers on both sides of the FUSER ASSY is pushed down, and then reprint the problem image. Does the problem still occur?  JG54A6AA	Go to step 2.	End of work.
2	Checking the paper condition Have new, dry and recommended paper on. Re-print the problem image. Does the problem still occur?	Go to step 3.	End of work
3	Checking Heat Roll and Pressure Roll Remove FUSER ASSY. (RRP8.8) Warning; Start the operation after the FUSER ASSY have cooled down. Turn the gear of the heater roller with a finger, and check the Heat Roll and Pressure Roll. Are the Heat Roll and Pressure Roll damaged or stained?	Go to step 4.	Replace FUSER ASSY. (RRP8.8)

Step	Check	Yes	No
4	Checking FUSER ASSY Turn the gear of the Heater Roller with a finger. Check the contact condition of Heat Roll and Pressure Roll when rotating. Do Heat Roll and Pressure Roll contact evenly?	Go to step [ESS and possible causes].	Replace FUSER ASSY. (RRP8.8)

6. Judgment of Print Consistency

It is stated here how to judge simply the main print consistency printing with the standard paper (letter size). Keep the paper packaged in the operating environment for 12 hours, and then use the paper just after it has been unpacked.

Note

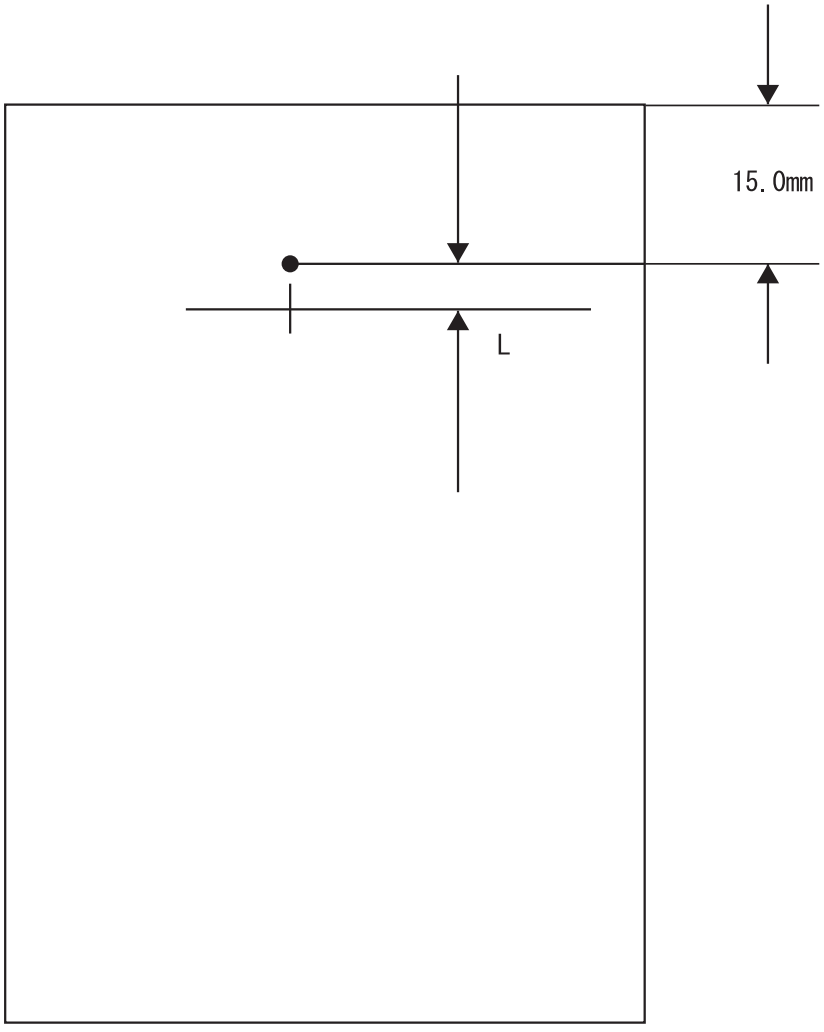
The image quality cannot be evaluated when the machine is faulty.

6.1 Leading edge registration

Measurement of the amount of print shift from the ideal position on the paper

Measure the amount of shift from the ideal point 15 mm away from the front end at center of right and left of the paper.

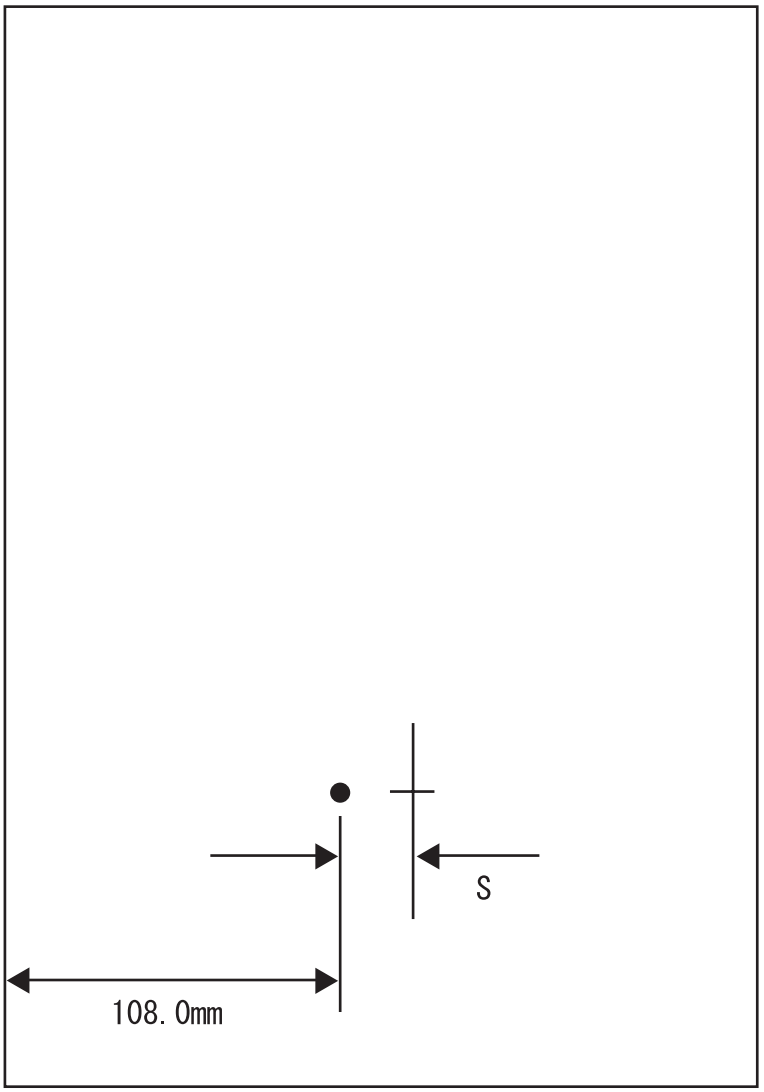
Reference: less than +/-2.0 mm



JG54A2AA

6.2 Side Edge Registration

Measure the amount of shift from the ideal point 108.0 mm away from the left end at center of front and-back of the paper.
Reference: less than +/-2.5 mm



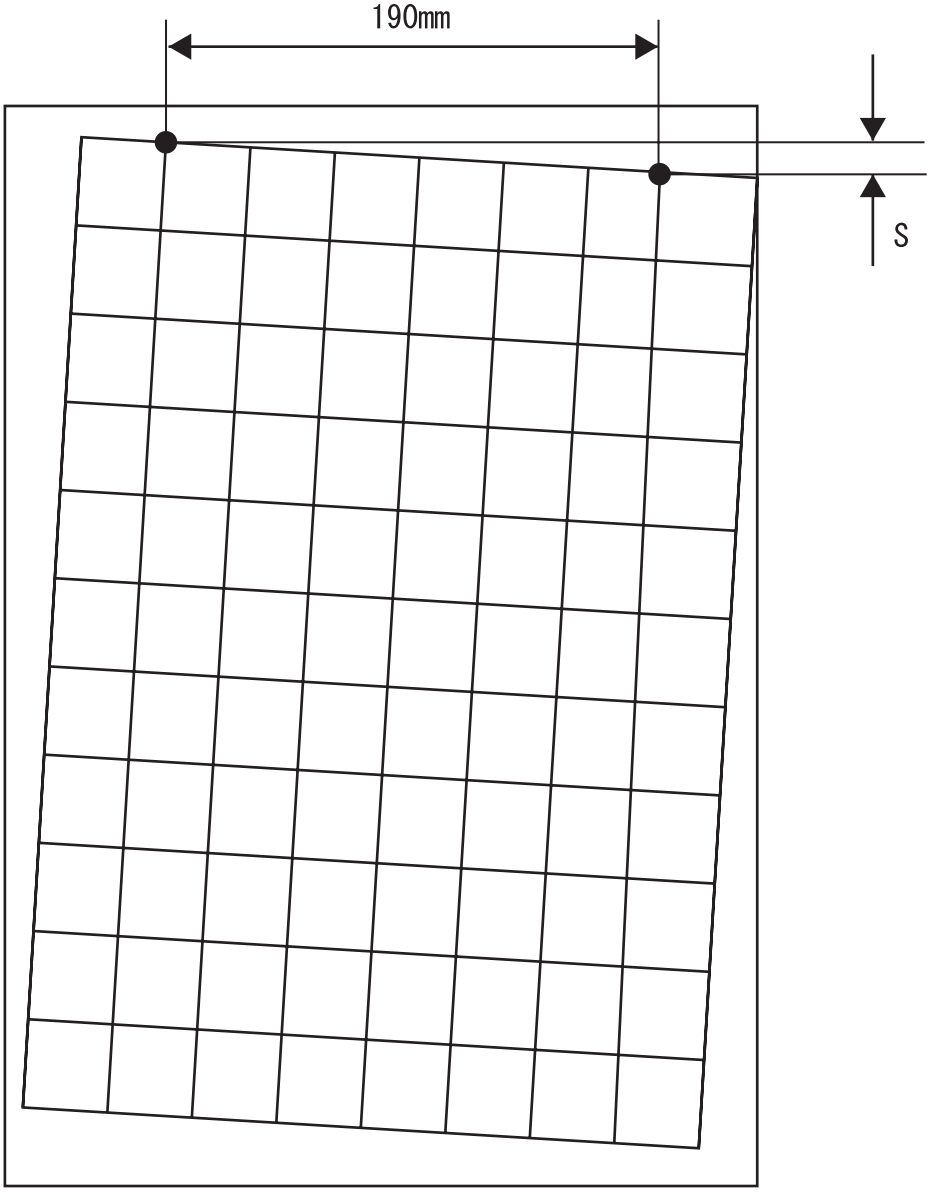
JG54A1AA

6.3 Skew

Measurement of the inclined paper feeding

Measure the vertical distance of two points 190 mm away each other on the top horizontal line.

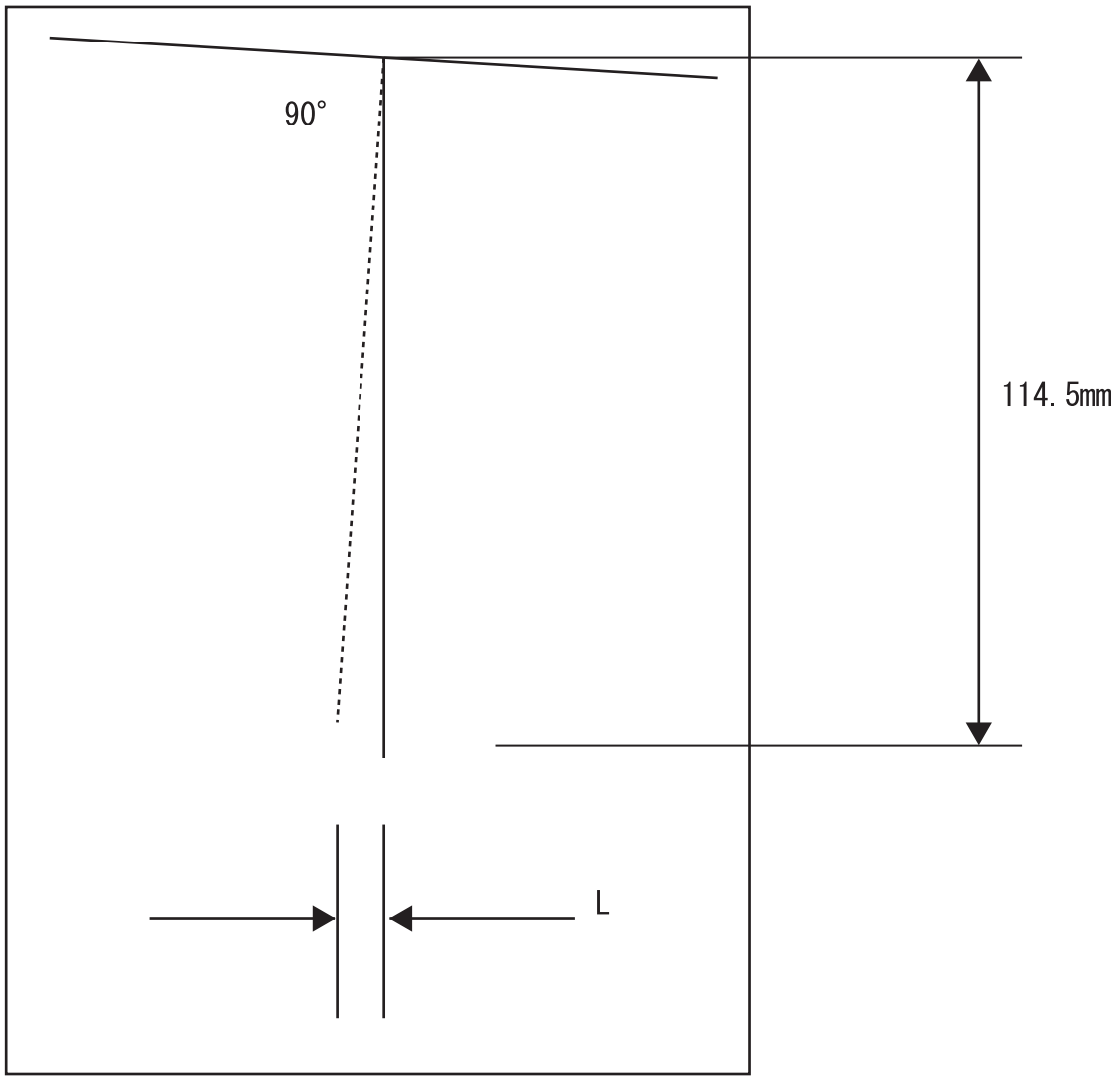
Reference: less than +/-1.2 mm



JG54A0AA

6.4 Perpendicularity

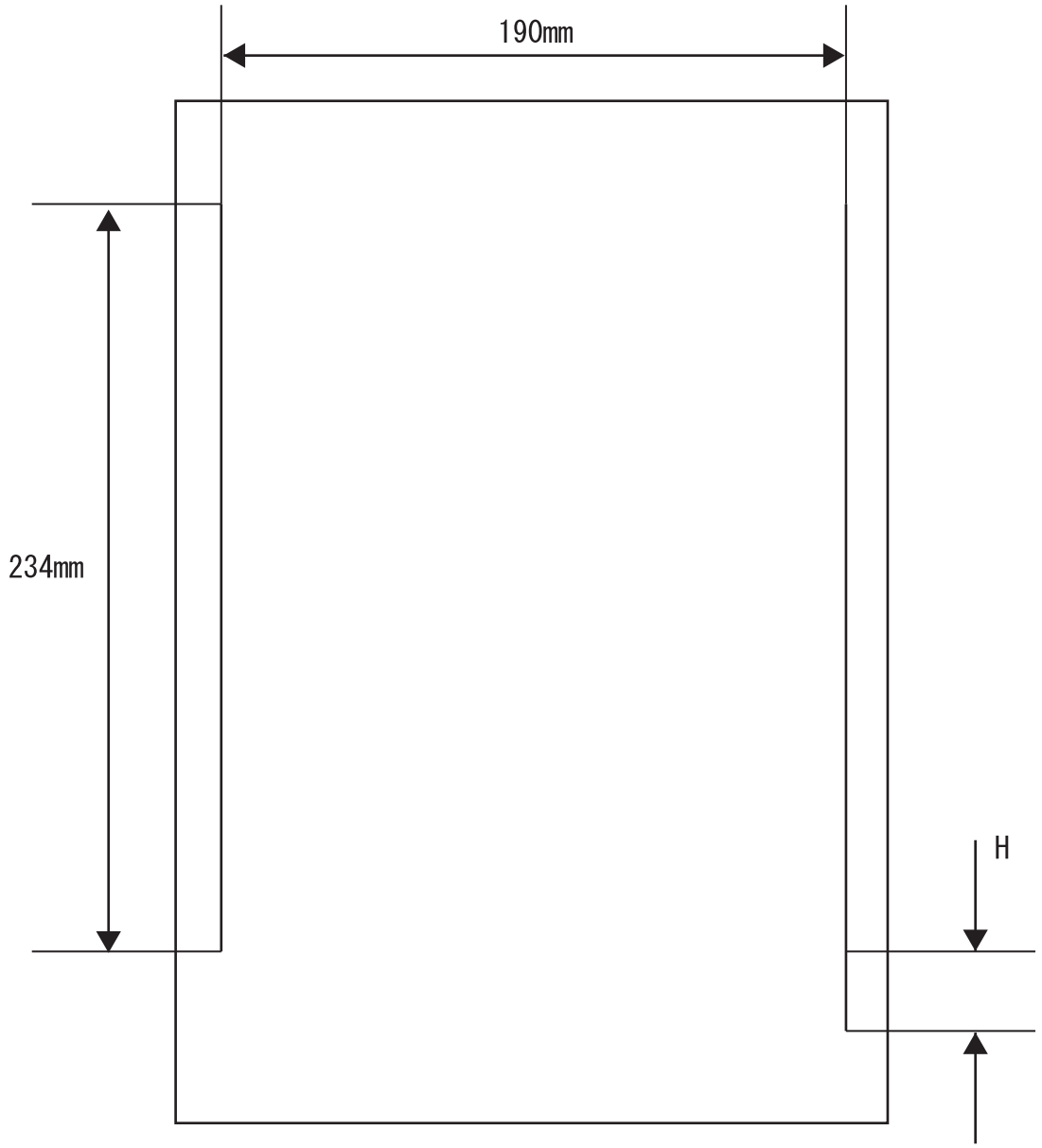
Measurement of the perpendicularity for suppressing inclines of ROS and OPC.
Check the perpendicular line to the horizontal line to measure the horizontal distance at the point 114.5 mm away vertically from center of top horizontal line.
Reference: less than +/-0.8 mm



JG54A3AA

6.5 Parallelism

The parallelism is difference of feeding speed between left and right sides of the paper.
Measure the difference of length between two 234 mm long vertical lines 190 mm away each other.
Reference: less than +/-1.2 mm



JG54A4AA

7. Preventive Maintenance

When visiting the customer for a service call, perform the maintenance work to prevent any additional problems.

Procedure for preventive maintenance

1) Check how the customer is using the machine.
2) Write down the cumulative print count.

NOTE

Use the cumulative print count as a guide of replacing periodic replacement parts. Replace the periodic replacement parts as required.

3) Print several test prints to ensure that there are no problems.
4) Remove foreign articles on BTR ASSY, FUSER ASSY and paper transfer rolls, and clean stains with a brush and dry waste cloth.

NOTE

When stains are heavy, clean with dampened cloth, and then clean with dry cloth. Be careful not to damage the parts.

5) Cleaning the fan exhaust
Remove COVER REAR, and clean the dust on MAIN FAN with a brush.
Remove COVER FRONT, and clean the dust on FAN SUB.

NOTE

The clogged exhaust and fan can result in a temperature rise internally, leading to potential failures.

6) Print several test prints to ensure that there are no problems.

Chapter 2 Diagnostics CONTENTS

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Chapter 2 Diagnostics

1. Diagnostics

1.1 Overview

Diagnostics enable you to run various test on printer components. You can run motors forward and reverse and at different speeds, the actuation and de-actuation of sensors or switches, energize and de-energize solenoids, etc.
In addition, you can perform tray alignment routines, reset maintenance counters, set serial number and asset tag, test the operator panel and run test prints.

The Diagnostic Mode has the following menus:

- Digital Output
- Digital Input
- Analog Output
- Analog Input
- EEPROM Address
- EEPROM Value
- Maintenance Info
- Operator Panel
- Test Print
- Flash Summary
- Print Summary

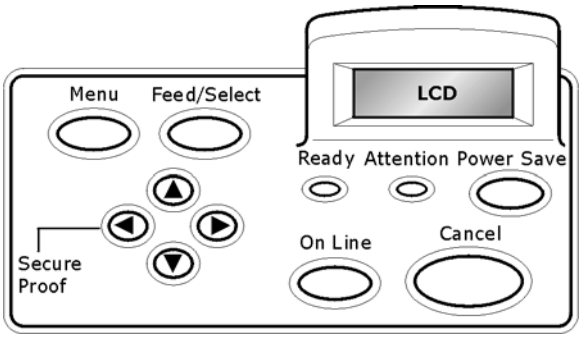
2. Entering Diagnostics

To enter diagnostics, perform the following:

1. Switch the printer power OFF.
2. Press and hold both the “Menu” and “▶” buttons on the Operator Panel
3. Switch the printer power ON.
4. Continue to hold the “Menu” and “▶” buttons until “Initializing” is displayed on the LCD.
5. Release the two buttons, after a short period of time, “Output Tests” will be displayed.
6. Proceed to Main Menu.

To exit diagnostics, repeatedly press the “Cancel” button until Ready is displayed.

Control Panel Layout



3. Main Menu

3.1 Navigating through the Diagnostic Menus

Four buttons are used to navigate through the diagnostic menus and sub-menus, (◀, ▶, ▲, ▼). From the initial menu selection “Output Tests” (see 3.2), pressing the “▼” button moves down the menu to “Input Tests” then to “Alignment” and so on. Pressing “▲” moves up through the menu. The menus are in the form of a continuous loop. When you reach the last selection on the menu, pressing “▼” will take you to the top of the menu.

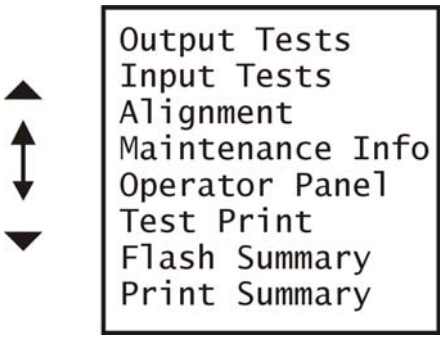
With the desired menu displayed, pressing “▶” activates that menu. Any sub-menu items may be accessed by using the “▼ “and “▲“ buttons. If the selected menu has no sub-menus, pressing “▶" will start the test. If the test is a motor, the motor will run. If the test is a solenoid, the solenoid will energize. If the selected menu has a sub-menu, use the “▼” or “▲” buttons to move down or up through the menu selections. When the desired menu is displayed, press “▶” to activate the menu. In some cases the sub-menu may be a value. The value may be Yes / No or a number. Use the “▼ “and “▲“ buttons to change the value and the “▶” button to lock in the new value.

Use the “◀” button to back out of sub-menus to the next higher level. Repeatedly pressing the “◀” button will return you to the Ready condition.

3.2 Main Menu

When you first enter diagnostics, the LCD will display “Output Tests” and the first selection of the main menu.

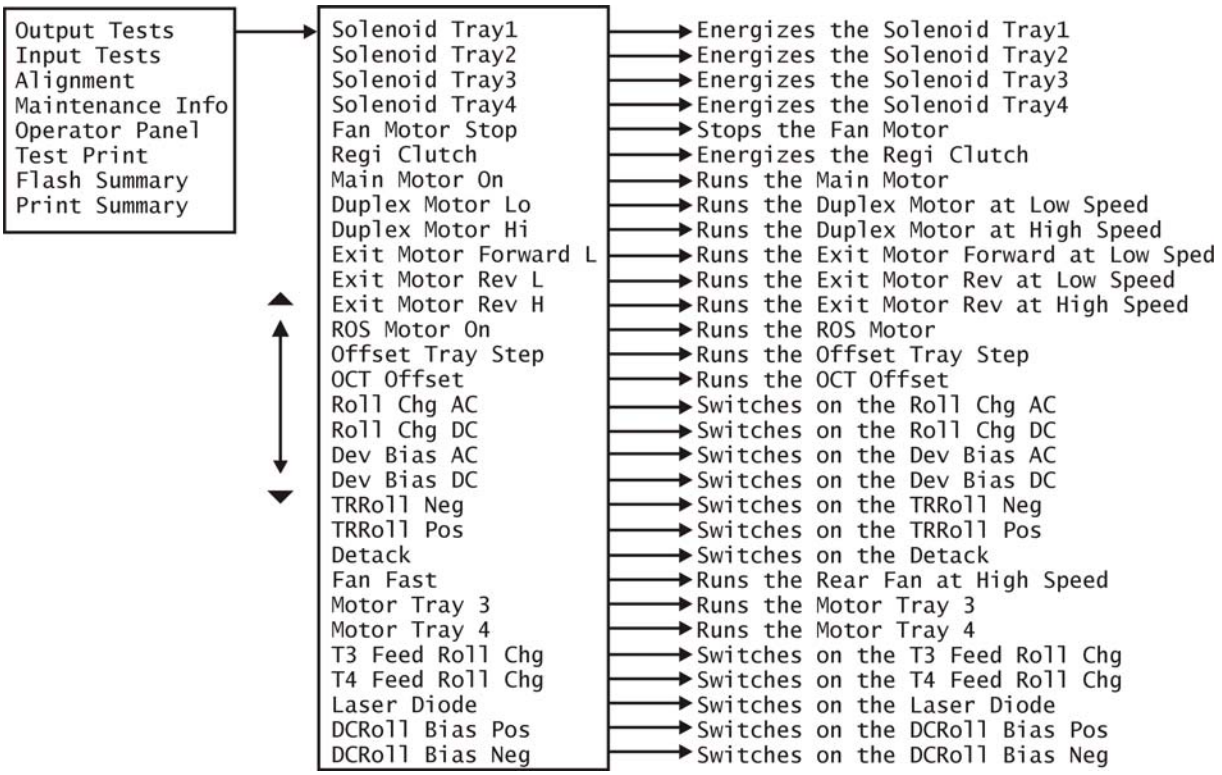
The complete Main Menu is shown below. Pressing the “▼” or “▲” will scroll through the menu list.



4. Output Tests

With “Output Tests” displayed on the LCD, pressing the “▶” button will enter the “Output Tests” menu and display the first menu selection.

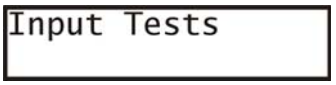
The complete Output Tests menu is displayed in the figure below. None of the menu selections in the Output Tests have sub-menus. Pressing “▶” will run the menu item currently displayed. Pressing “◀” or “CANCEL” will stop the menu item displayed. These tests are verified by audible sounds. Pressing “◀” again will return you to the next higher menu or “Output Tests”.



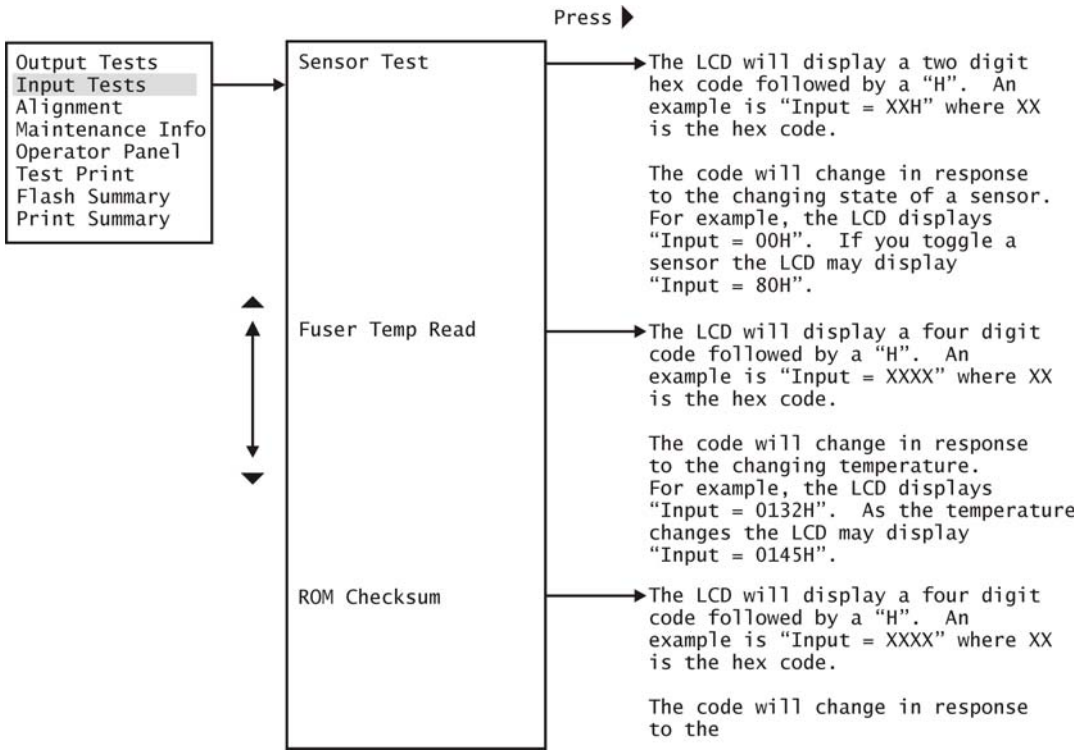
5. Input Tests

Input tests are used to test cover interlocks, paper path sensors, paper size switches, etc., fuser temperature and ROM Checksum.

With “Input Tests” displayed on the LCD, pressing the “▶” button will enter the “Input Tests” menu and display the first menu selection (Sensor Test). Pressing the “▶” button again will enable the sensor test. Pressing “◀” halts the test.

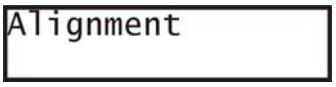


The following illustrates all the sub-menus in the “Input Tests” menu.

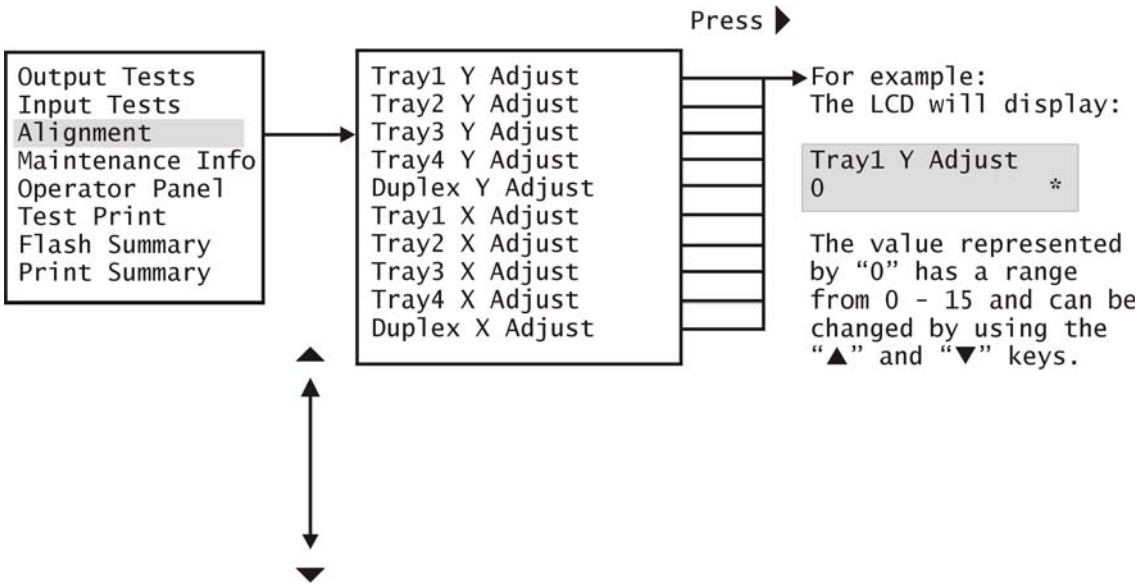


6. Alignment

The image registration alignment allows each tray to be adjusted independently. Alignment routines are used to set “X” and “Y” values for the paper trays.
With “Alignment” displayed on the LCD, pressing the “▶” button will enter the “Alignment” menu and display the first menu selection (Tray1 Y Adjust). Pressing the “▶” button again will enable the “Tray1 Y Adjust”. Pressing “◀” halts the test.
Pressing the “▼ “and “▲“buttons changes the value from 0 - 15.

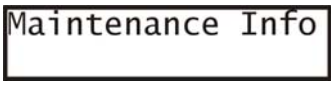


The illustration that follows shows all the sub-menus in the Alignment menu.

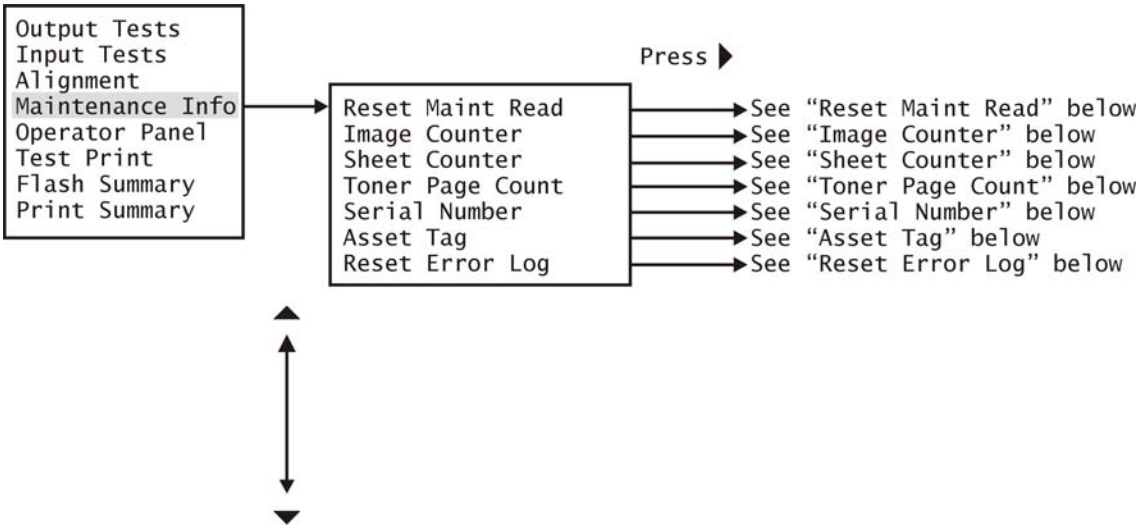


7. Maintenance Info

Maintenance Info indicates the current count of the selected menu, the serial number of the printer, or resets the error log.
With “Maintenance Info” displayed on the LCD, pressing the “▶” button will enter the Maintenance Info menu and display the first menu selection.



See the menu descriptions below.



7.1 Reset Maint Read

Pressing “▶” resets the Maintenance counter.

7.2 Image Counter

Pressing “▶” will enter the image counter menu and display a seven digit number indicating the total images produced by the printer.

7.3 Sheet Counter

Pressing “▶” will enter the sheet counter menu and display an eight digit number indicating the total sheets of paper fed by the printer.

7.4 Toner Page Count

Pressing “▶” will enter the toner page count menu and display a seven digit number indicating the total number of color prints produced by the printer.

7.5 Serial Number

Pressing “▶” will enter the Serial Number menu. The menu will allow the entering of up to a 16 digit serial number. If no number has previously been entered, the second line of the display will be blank with a line at the bottom of the first digit position.

Using the “▼ “or “▲“ buttons scroll through the possible choices that can be entered in each digit location. The choices are: ! " # $ % & ' ( ) * + , -. / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\ ] ^ _ ` a b c d e f g h I j k l m n o p q r s t u v w x y z { | } ~
As you can see, numbers, letters, or symbols can be entered as part of the serial number. When the desired entry is displayed in the first location, press “▶.” Pressing “▶” makes the second position active. Repeat the procedure above to enter all digits necessary.
You may enter up to 16 digits. If you enter less then 16 digits, after the last digit is entered, repeatedly press “◀” until the main menu is displayed

7.6 Asset Tag

Pressing “▶” will enter the Asset Tag menu. The menu will allow the entering of up to a 16 digit number. If no number has previously been entered, the second line of the display will be blank with a line at the bottom of the first digit position.
Using the “▼ “or “▲“ buttons scroll through the possible choices that can be entered in each digit location. The choices are: ! " # $ % & ' ( ) * + , -. / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\ ] ^ _ ` a b c d e f g h I j k l m n o p q r s t u v w x y z { | } ~
As you can see, numbers, letters, or symbols can be entered as part of the Asset Tag number. When the desired entry is displayed in the first location, press “▶.” Pressing “▶” makes the second position active. Repeat the procedure above to enter all digits necessary.
You may enter up to 16 digits. If you enter less then 16 digits, after the last digit is entered, repeatedly press “◀” until the main menu is displayed

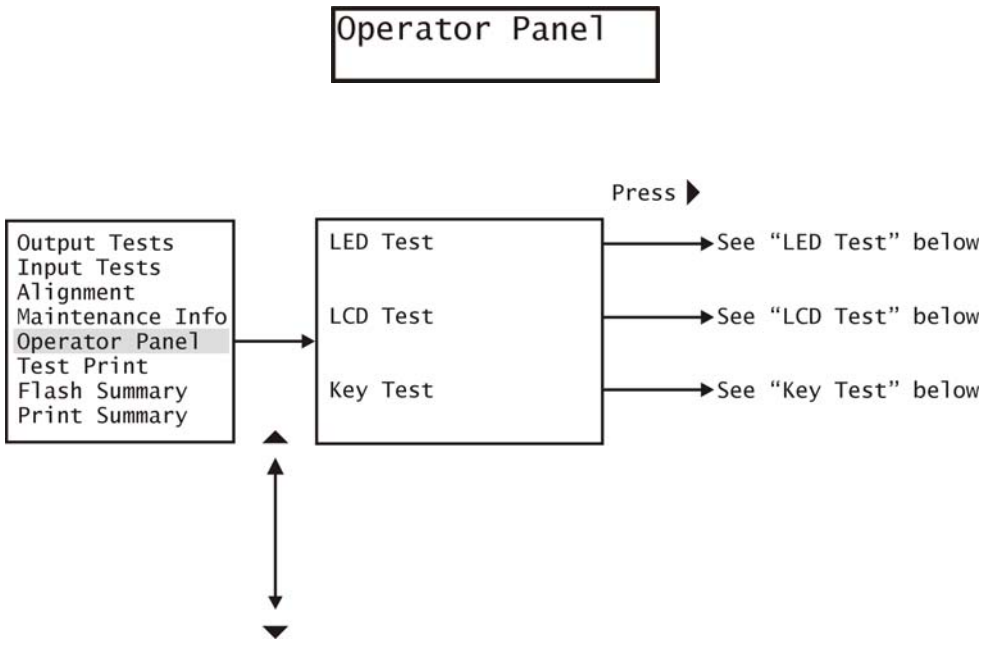
7.7 Reset Error Log

Pressing “▶” will enter the reset error log submenu and display “**ONLINE to accept**” on the first line and “**CANCEL to abort**” on the second line. You can confirm resetting the error log by pressing the “Cancel” button.

8. Operator Panel

Operator Panel Menu enables the running of tests on Operator Panel. These tests include the LEDs, the LCD, and the Keys (buttons).

With “Operator Panel” displayed on the LCD, pressing the “▶” button will enter the Operator Panel menu and display the first menu selection.



8.1 LED Test

With LED Test displayed, pressing the “▶” button will run the LED test. The LED test is used to verify operation of the Operator Panel LEDs.

8.2 LCD Test

The LCD test is used to test the segments of the LCD display. With LCD Test displayed, pressing the “▶” button will run the LCD test. The first line will display “00 - 0F”. The second line will display sixteen different characters and the second line will display “10 – 1F”.

Pressing the “▲” button will proceed to the next group, 20 – 2F. Again the first line will display sixteen characters and the second line will display “20 – 2F”. There are sixteen different groups in this test. They are:

00 - 0F	50 – 5F	A0 – AF	F0 - FF
10 – 1F	60 – 6F	B0 – BF	
20 – 2F	70 – 7F	C0 – CF	
30 – 3F	80 – 8F	D0 – DF	
40 – 4F	90 – 9F	E0 – EF	

8.3 Key Test

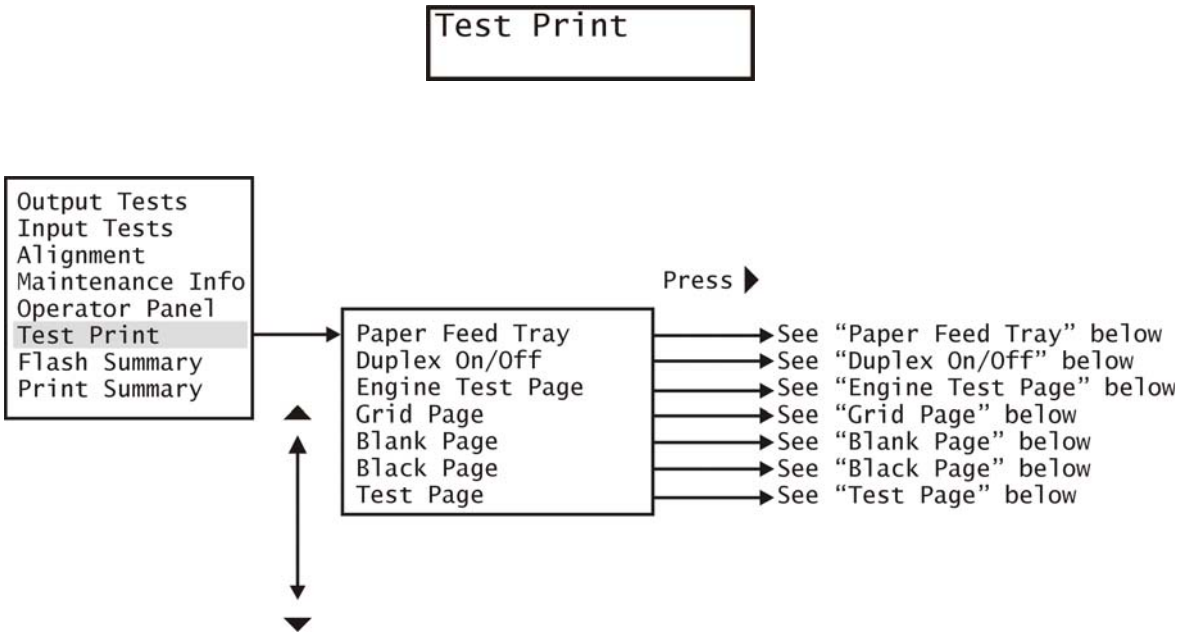
The key test enables the testing of eight buttons on the operator panel. With Key Test displayed, pressing the "▶" button will enter the key test.

Opn: This indicates that a button is Open. As you press each button, the corresponding location will change to **Cls** indicating that button is closed.

9. Test Print

The Test Print Menu enables the running of five test prints, selecting the tray for the source paper, and selecting duplex or simplex.

With “Test Print” displayed on the LCD, pressing the “▶” button will enter the Test print menu and display the first menu selection.



9.1 Default Tray

With Test Print displayed on the LCD, pressing the “▶” button will display the current default tray. The default tray is the tray that will be used to print any of the test pages below. The tray choices for this menu are:

Tray 1
Tray 2
Tray 3
Tray 4

Use the “▼ “ or “▲“ buttons to scroll through the choices. With the desired tray displayed, press “▶” to save your choice and return to the Test Print menu.

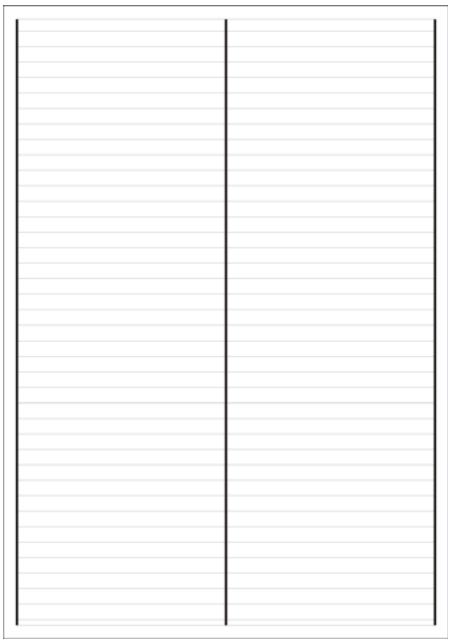
9.2 Duplex

With “Duplex” displayed on the LCD, pressing the “▶” button will enter the duplex menu and display the current setting. If duplex is set to ON, all test prints will print on both sides. If duplex is set to OFF, all test prints will be printed in the simplex mode.

The choices for this menu are ON and OFF. se the “▼ “ or “▲“ buttons to toggle between ON and OFF. With the desired choice displayed, press “▶” to save your choice and return to the Test Print Menu.

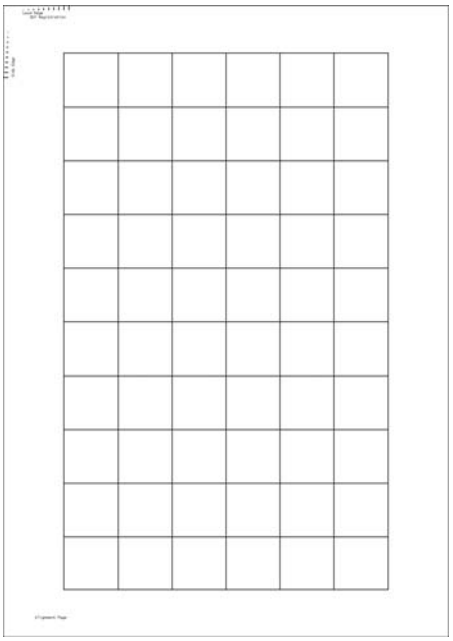
9.3 Engine Test Page

With “Engine Test Page” displayed on the LCD, pressing the “▶” button will print the Engine Test Page.



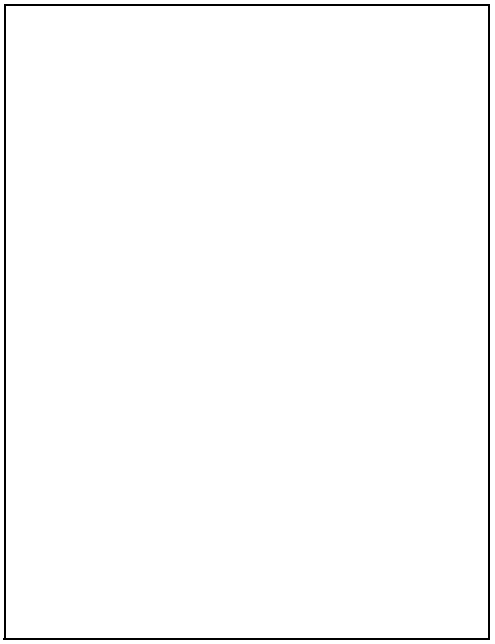
9.4 Grid Page

With “Grid Page” displayed on the LCD, pressing the “▶” button will print the Grid Page.



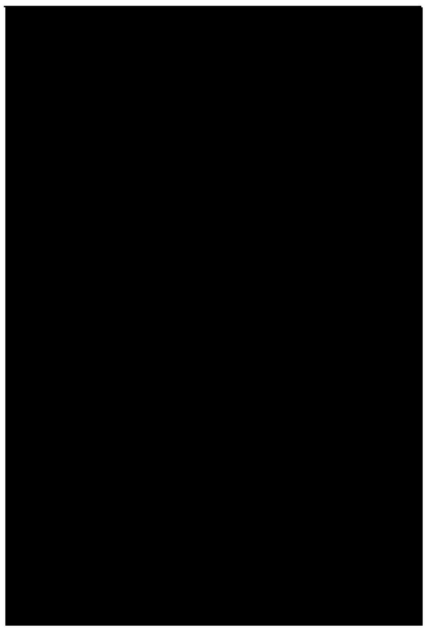
9.5 Blank Page

With “Blank Page” displayed on the LCD, pressing the “▶” button will print a Blank Page.



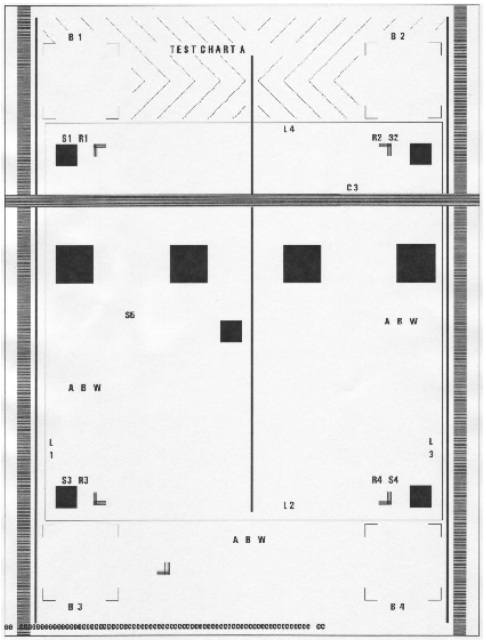
9.6 Black Page

With “Black Page” displayed on the LCD, pressing the “▶” button will print a page with a large black square.



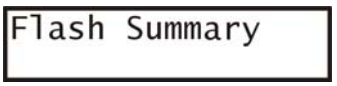
9.7 Test Page

With “Test Page” displayed on the LCD, pressing the “▶” button will print the Test Page.



10. Flash Summary

With ”Flash Summary” displayed on the LCD, pressing the “▶” button will print the Flash Summary (shown below). When the print completes, the display will remain at the Flash Summary Menu.



This is an example of the Flash Summary Report

Flash Summary

SIMM 0 (CODE FLASH):

Socket 0: 20 MB (TOSHIBA 58256) - 1280 blocks, 0 reserved
TOTAL : 20 MB

SIMM 1 (CODE FLASH):

Socket 0: 12 MB (TOSHIBA 58256) - 768 blocks, 0 reserved
TOTAL : 12 MB

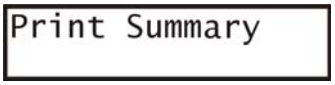
FILES:

CORE : size = 200,488: July 18, 2006 04:49:09 PM
MDM : <Directory>
FCB. : size = 0: June 8, 2006 09:41:13 AM

tfm : <Directory>
FCB. : size = 0: June 8, 2006 09:41:13 AM

11. Print Summary

With “Print Summary” displayed on the LCD, pressing the “▶” button will print the Print Summary (shown below). When the print completes, the display will remain at the Print Summary Menu.



This is an example of the Print Summary Report

Diagnostics Summary

Alignment

Tray1 Y Adjust = 8
Tray2 Y Adjust = 8
Tray3 Y Adjust = 8
Tray4 Y Adjust = 8
Duplex Y Adjust = 8
Tray1 X Adjust = 8
Tray2 X Adjust = 8
Tray3 X Adjust = 8
Tray4 X Adjust = 8
Duplex X Adjust = 8

Maintenance Info

Image Counter = 2604
Sheet Counter = 33554673
Toner Page Count = 1894
Serial Number = XXXXXXXXXXXX

NVM Settings

NVM Location 0 = = 8
NVM Location 1 = = 8
NVM Location 2 = = 8
NVM Location 3 = = 8
NVM Location 4 = = 8
NVM Location 5 = = 8
NVM Location 6 = = 8
NVM Location 7 = = 8
NVM Location 8 = = 8

Error Log

19 : 2038
SE 0E :
22 : 2061
22 : 2061
SE 0E :
SE 0E :
SE 0E :